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G.S PAPER I

1. HISTORY

1.1 Red Fort & Delhi - Symbols & Narratives of Power

What is the issue?

- On the Republic Day, the extension of farmers' protest witnessed scenes of violence on the ramparts of the Red Fort.
- In this context, here is a look at symbols and narratives of power down the ages in relation with Red Fort and Delhi.

How did Delhi evolve as the 'Capital of Hindustan'?

- Before the 13th century, Delhi (or 'Dilli') was, politically speaking, a moderately significant town.
- It was for long the capital of the modestly sized kingdom of the Rajput Tomar dynasty.
- By the mid 12thcentury it was conquered by the Rajput Chauhans who, however, ruled from Ajmer.
- It was the conquest by Ghurid Turks in the late 12th century that put Delhi on the map as a centre of power.
- As the capital of the Sultanate, Delhi gradually developed an aura of power.
- Gradually, in the popular imagination, it came to be associated with a dominant power in the subcontinent.
- Babur, having defeated Ibrahim Lodi at Panipat in 1526, headed for Delhi, which he described as "the capital of all Hindustan."
- This was even though the Lodis had ruled from Agra for the previous two decades.

How did it work as the seat of Mughal power?

- During the first century or so of Mughal rule, Agra was the capital for longer than Delhi.
- Still, the Mughals continued to be seen as rulers of Delhi.
- A Sanskrit inscription from 1607 refers to Akbar as "Dillishvara", the lord of Delhi, though he had ruled from Delhi for a very short time.
- In a Persian inscription dated 1621 on the Salimgarh Bridge adjoining the Red Fort, Jahangir, who never reigned from Delhi, was described as "Shahanshah e Dehli", the emperor of Delhi.
- It was only in the reign of Shah Jahan (1628-58) that the Mughal connection to Delhi was given concrete form.
- This happened with the founding of the city of Shahjahanabad and the inauguration of its palace citadel, the Red Fort, in 1648.
- From that date to the end of Mughal rule in 1857, Delhi was the formal capital of the Mughal empire.
- There was another important feature of the Delhi of these two centuries.
    - From the 13th century, the capital had been located at a number of different sites.
    - These included Mehrauli, Kilugarhi, Siri, Tughlaqabad, Jahanpanah, Firozabad, and Dinpanah.
    - But by now, it came to be settled permanently in Shahjahanabad, with the emperor's seat being in the Red Fort.

What happened from the 18th century?

- With political developments in the 18th century, the Mughal Empire started on the long road to decline.
- Erstwhile Mughal provinces such as Bengal, Awadh, and Hyderabad broke away, and new forces like the Sikhs and the Marathas arose.

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- The Mughal territories shrank and the Mughal emperor became increasingly ineffectual even within them.
- However, his symbolic significance as the source of legitimate sovereign authority continued.
- So, many of these new states, including a newcomer, the East India Company, continued to rule in his name, and to issue coins in his name until well into the 19th century.
- The control over the emperor and of Delhi was, therefore, a prize worth fighting for.
    - Safdar Jang, the Nawab of Awadh, fought a civil war in an attempt to keep his position as Prime Minister of the Mughal emperor.
    - The Sikhs had their ambitions, and came up to the walls of the city in 1783 before retreating.
    - The Marathas met with greater success the following year, when MahadjiSindhia became the power behind the throne.
    - Finally, the East India Company defeated the Maratha forces in 1803, and went on to control Delhi and the emperor for the next 54 years.
- In the popular imagination, legitimate rule was associated with the Mughal emperor.
- This was true to the extent that when the country broke out in revolt in 1857, the mutinous soldiers made their way to Delhi, seeking his leadership.
- When the revolt in Delhi had been crushed, the British army occupied the Red Fort.
- The British colonial government had sought to inscribe its power and might at the Red Fort.

What is the post-independence scenario?

- With the coming of Independence, it was necessary that the site of Red Fort be symbolically reclaimed for the Indian people.
- It was for this reason, that after the first hoisting of the national flag at India Gate on August 15, 1947, the next day, the Prime Minister hoisted it on the ramparts of the Red Fort.
- This was to then become India's lasting Independence Day tradition.

G.S PAPER II

2. POLITY

2.1 3 States, 3 Anti-Conversion Laws - Similarities and Differences

Why in news?

The Madhya Pradesh government is set to follow Uttar Pradesh and Himachal Pradesh in passing an anti-conversion law that outlaws religious conversion solely for the purpose of marriage.

What are the key features?

- **Common feature** - At least 10 states including MP and Himachal Pradesh already have anti-conversion laws.
- The key difference in the new laws is that they seek to criminalise conversions solely for the purpose of marriage.
- A common feature of all three laws is the declaration of such marriages as "null and void."
- The penalising of conversions done without the prior approval of the state is also a common feature.
- **Prior notice** - The MP law requires a 60-day prior "declaration of the intention to convert" to the District Magistrate for conversion to be valid.
- Following this, a couple from different religions can be legally married.
- The Uttar Pradesh law, Prohibition of Unlawful Conversion of Religious Ordinance, 2020, too requires a 60-day notice.

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- It also requires the Magistrate to conduct a police inquiry to ascertain the real intention behind the conversion.
- The Himachal Pradesh Freedom of Religion Act, 2019 requires a 30-day prior "declaration of intention to convert".
- **Investigation** – The MP law states that there cannot be an investigation by a police officer except on the written complaint of the person converted or the person's parents/siblings.
- Guardians of the person converted can file a complaint only with the permission of a court.
- The MP law also says that no police officer below the rank of a sub-inspector can investigate an offence under the law.
- The UP law allows the same people as allowed by the MP law to file a complaint.
- Under the Himachal law, prosecution cannot be initiated without the prior sanction of an officer not below the rank of a sub-divisional magistrate.
- **Burden of proof -** The MP law places on the person converted the burden of proving that the conversion was done without any coercion or illegality.
- The Himachal law has a similar provision.
- The UP law goes further, placing this burden of proof on people who "caused" or "facilitated" the conversion and not on the individual.
- Even in the police inquiry, if the Magistrate is not satisfied, criminal action can be initiated against persons who "caused" the conversion.
- This includes those who committed the offence; omitted to act and prevent the offence; and aided, abetted, counselled or procured people for committing the offence.
- **Maintenance & inheritance** - Clearly, unless given prior notice to the state government, the marriage is declared "null and void" if either the husband or the wife has converted, even consensual.
- But, MP's new law seeks to protect the right of women and her child from such "null and void" marriage.
- Under Section 9, the woman whose marriage has been declared null and void under this legislation, and her children, will have a right to maintenance.
    - The law does not, however, provide a recourse for ensuring the marriage can be protected subsequently.
- Neither the UP nor the Himachal law has such provisions for protecting women and children.
- **Quantum of punishment** - The offence of illegal conversion under the laws of all three states is cognisable and non-bailable.
- This means that an arrest can be made without a warrant, and bail is granted only by the discretion of the judge.
- Under the MP law, a person can be sentenced to a jail term between one and 5 years for converting or attempting to convert unlawfully.
- If the person converted is a woman, a minor or a person belonging to a SC/ST, the sentence is 2 to 10 years.
- It also provides for a jail term of 3 to 10 years for concealing one's religion during the marriage.
- The UP law provides for a minimum punishment of one year, which can be extended up to 5 years, and repeat offences can carry double the maximum sentence.
- Men are awarded a higher punishment if convicted of causing conversion of a woman, a minor or a person belonging to an SC/ST — in which case the sentence is between 2 and 10 years.
- In the Himachal law, a person can be sentenced to a jail term of one to 5 years for converting or attempting to convert unlawfully.
- If the person converted is a woman, a minor or a person belonging to an SC/ST, the sentence is 2 to 7 years.

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2.2 FIRs against Journalists for Inciting Violence

Why in news?

- Recently Congress MP Shashi Tharoor & other journalists were booked in sedition case for their social media posts.
- It is alleged that these posts were responsible for violence during 26 Jan tractor rally by farmers in Delhi.

What are the charges against them?

- The police have invoked the offences of sedition (124A of IPC), conspiracy (Section 120B of IPC), promotion of enmity between different sections and breach of harmony between groups.
- Besides, they have sought to portray it as a threat to national security and an attempt to instigate violence.
- A similar FIR has been filed based on the complaint in Bhopal, but it invokes only sections relating to promotion of enmity and ill-will.

How did the journalists respond to this?

- They said that it was natural for journalists to report emerging details on a day of protest when reports were coming from eyewitnesses on the ground and the police.
- They were concerned about the attempt made by police to portray these intentionally malicious.
- They said that it is not surprising to invoke sedition case against them by the police because it is a now familiar practice of creating an imagined threat to national security.
- And whenever police get an opportunity to slap criminal cases against journalists who are highly critical of current establishment, they invoke these sections of IPC.

What can we infer from this?

- It is strange that the police have sought to link the violence on January 26 with the circulation of a piece of misleading information.
- An enraging part is that all those who put similar information through their social media are seen to be acting in concert and even participating in the same conspiracy.
- Registration of cases in 2 different states from the place where violence occurred indicates an attempt to build a story that media misreports are the cause for the violence that day.
- It also shows a tendency not to miss an opportunity to harass and intimidate journalists.

2.3 Process of Converting a Bill into a Law

Why in news?

Recently government announced that the three contentious farm laws will be on hold for one to one-and-a-half years.

Does a law automatically come into force after the bill is passed by the parliament?

- Parliament has the power to make a law and to remove it from the statute books.
- Over the years, Parliament has repealed several laws & there are precedents where after it has been passed, it has not been in force for several years.
- Passing the bill does not mean that it will start working from the next day rather 3 steps are involved to become a functioning law.

What is the 1st step in this process?

- The first step is the President giving his or her assent to the bill & most of them receive assent in a few days.
- Article 111 of the Constitution specifies that the President can either sign off on the bill or withhold his consent and rarely he withholds his assent to the bill.
- The last time it happened was in 2006 when President A P J Abdul Kalam refused to sign a bill protecting MPs from disqualification for holding an office of profit.
- If a bill is sent to Parliament for reconsideration & if Parliament sends it back to the President, he or she has no choice but to approve it.

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- In 1986, President Zail Singh made use of a loophole in the Constitution which does not specify a time limit for the President to approve a bill.
- A bill which was criticised for violating the privacy of personal correspondence was sent to him & he decided not to take any action on the bill until his term ends.
- Today President Ram Nath Kovind signed the three farm bills into law within a week of their passing in September 2020.

What is the 2nd step in this process?

- The next step is deciding the date on which the law comes into effect & in many cases Parliament delegates power to government to determine this date.
- The bill state that the law "shall come into force on such date when government may by notification in the Official Gazette appoint & different dates may be appointed for different provisions of Act".
- For example, Parliament passed the **Recycling of Ships Act** in December 2019 & in October 2020 government brought Section 3 of the law into force.
- This section empowers the government to designate an officer to supervise all ship recycling activities in India.

How is the date of implementation decided?

- A bill specifies the exact date on which it will come into effect & bills which replace ordinances mostly do that.
- In such cases, the bill sets the date on which the President signed the ordinance as the day the law will come into force.
- Similarly the three farm bills replacing their ordinances came into force on June 5, 2020.
- There are also instances when the government does not bring a law into force for many years.
- **National Environment Tribunal Act** was never brought into force which were passed in 1995 and cleared by the President.

What is the 3rd step in this process?

- A bill passed by Parliament is the outline of a law & to come into effect, individuals need to be recruited or given the power to administer it.
- The implementing ministry also needs to finalise forms to gather information and provide benefits or services & these day-to-day operational details are called rules and regulations.
- Parliament gives the government the responsibility of making them & these regulations are critical for the functioning of law.
- In the case of farm laws, the government has made some rules in October 2020.
- If the government does not make rules and regulations, a law or parts of it will not get implemented &**Benami Transactions Act of 1988** went unimplemented due to absence of regulations.
- Parliament has recommended that the government has to make rules within six months of passing a law but parliamentary committees observed that this recommendation is breached.
- The government not only has the power to make rules but can also suppress rules made by it earlier.

2.4 Presidential Address in the Parliament

What is the issue?

As the first Parliament session of 2021 begins with President Ram Nath Kovind addressing members of the Parliament, it is pertinent to know about the practice of Presidential address.

How did this practice originate?

- In the United Kingdom, the history of the monarch addressing the Parliament goes back to the 16th century.
- In the United States, President Gorge Washington addressed Congress for the first time in 1790.
- In India, the practice of the President addressing Parliament can be traced back to the Government of India Act of 1919.

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- This law gave the Governor-General the right of addressing the Legislative Assembly and the Council of State.
    - The law did not have a provision for a joint address.
    - But the Governor-General did address the Assembly and the Council together on multiple occasions.
- There was no address by him to the Constituent Assembly (Legislative) from 1947 to 1950.
- After the Constitution came into force, President Rajendra Prasad addressed members of Lok Sabha and Rajya Sabha for the first time on January 31, 1950.

What does the Constitution specify?

- The Constitution gives the President the power to address either House or a joint sitting of the two Houses of Parliament.
- Article 87 provides two special occasions on which the President addresses a joint sitting.
    1. to address the opening session of a new legislature after a general election
    2. to address the first sitting of Parliament each year
- A session of a new or continuing legislature cannot begin without fulfilling this requirement.
- When the Constitution came into force, the President was required to address each session of Parliament.
- So during the provisional Parliament in 1950, President Prasad gave an address before every session.
- The First Amendment to the Constitution in 1951 changed this position and made the President's address once a year.
- The President's address is one of the most solemn occasions in the Parliamentary calendar.
- It is the only occasion in the year when the entire Parliament, i.e. the President, Lok Sabha, and Rajya Sabha come together.
- The Lok Sabha Secretariat prepares extensively for this annual event associated with ceremony and protocol.

What is the speech about?

- There is no set format for the President's speech.
- The Constitution states that the President shall "inform Parliament of the cause of the summons".
- The address of the President follows a general structure in which it -
    - highlights the government's accomplishments from the previous year
    - sets the broad governance agenda for the coming year

How is it finalised?

- The speech that the President reads is the viewpoint of the government and is written by it.
- Usually, in December, the Prime Minister's Office asks the various ministries to start sending in their inputs for the speech.
- A message also goes out from the Ministry of Parliamentary Affairs asking ministries to send information about any legislative proposals that need to be included in the President's address.
- All this information is aggregated and shaped into a speech, which is then sent to the President.
- The government uses the President's address to make policy and legislative announcements.

What is the further procedure?

- In the days following the President's address, a motion is moved in the two Houses thanking the President for his address.
- This is an occasion for MPs in the two Houses to have a broad debate on governance in the country.
- The Prime Minister replies to this 'motion of thanks' in both Houses, and responds to the issues raised by the MPs.
- The motion is then put to vote and MPs can express their disagreement by moving amendments to the motion.

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- Opposition MPs have been successful in getting amendments passed to the motion of thanks in Rajya Sabha on five occasions (1980, 1989, 2001, 2015, and 2016).
- They have been less successful in Lok Sabha.
- For example in 2018, Lok Sabha MPs tabled 845 amendments of which 375 were moved and negatived (rejected).

3. GOVERNANCE

3.1 Privacy and Surveillance

Why in news?

WhatsApp's users are switching to telegram & other apps after its new policy creates privacy fears among its users.

What is the WhatsApp's new policy?

- WhatsApp, with 459 million users, is the leading communications application for most Indians.
- As per its new terms & privacy policy, information which WhatsApp collects will be shared with facebook.
- The information includes mobile phone number, user activity & other basic information of WhatsApp account.
- Hence WhatsApp users switch to apps like -Signal and Telegram- which promise more privacy options.

What is the aim of WhatsApp's new policy?

- Facebook owns Instagram, WhatsApp & has sought to integrate the offerings from WhatsApp, Instagram and Facebook.
- This integration of three large consumption products is a means to monetise their everyday use by their consumers.
- This is because Facebook's revenue model uses data on its platform to allow advertisers to target ads towards users which can benefit from the WhatsApp data as well when new policy comes in.
- However such data transfer is not possible in EU since they have strict data protection laws.
- Hence Ministry of Electronics and IT has sent series of queries to WhatsApp why Indian users would be sharing information with Facebook unlike in Europe.
- So WhatsApp has postponed the date for users to accept its new privacy policy terms to May 15, 2021.

What can be done now?

- Indian government has to quickly take up a robust data protection law aligning with the recommendations of Srikrishna committee.
- The committee tried to address concerns about online data privacy that was in line with the 2018 Puttaswamy judgment.
- However the draft Bill proposed by the government in 2019 diluted some of its provisions.
- It mandated that only sensitive personal data needed to be mirrored in the country & not all personal data as mandated by the committee.
- But data localisation as proposed by the committee may not necessarily lead to better data privacy as it carries the possibility of domestic surveillance over Indian citizens.
- Though the proposed Bill has some of these features, similar to Europe's General Data Protection Regulation, it requires strong checks on state surveillance before it is passed.

3.2 Issues with MGNREGA

What is the issue?

- It is highly worrying that today legislations are promulgated without consulting those it wanted to serve.

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- This can be witnessed in the recent farmers protest against the farm laws as they were enacted without public consultation.

Why do any policy/law does require deliberations?

- Continuous dialogue is the norm for effective programme implementation & it is more required during the initial stages of law making of a government programme.
- Though policies are formulated with good principles, their implementations go in mess and are frequently amended due to people's concerns.
- In particular, redistributive, people-facing welfare policies require constant feedback which can be seen in MGNREGA policy.
- MGNREGA has the problem of payment rejections, software flaws& these issues occur due to lack of stakeholder's consultations.

What is the concern with the issue of payment rejections?

- Payments get rejected when government initiates the payment but money doesn't get credited due to technical issues.
- For example, on occasions, the block level data entry operators make errors in entering the account or Aadhaar details of workers.
- At other times, banks consider accounts as 'dormant' when the accounts are not used for some time leading to depriving money for the workers.
- Hence thorough understanding of the complex payment architecture is required which involves various line departments, banks & National Payments Corporation of India (NPCI).

What is the concern with software flaws?

- Software flaws breaks the link between workers's Aadhaar and their bank account in which software is maintained by the NPCI.
- Hence the workers face rejection stating that 'Inactive Aadhaar' exists & government officials, bank officials are unaware of these complex errors.
- Workers had to make multiple trips to short-staffed & overcrowded banks and are rudely replied that their payments have not come.
- Sometimes the reasons for rejections are rarely provided creating uncertainty to their existing insecure situation.
- Field officials often resort to temporary and incorrect quick fixes which backfire leaving the workers in despair.
- These issues were resolved by Rajasthan in a sensible manner.

How did the state of Rajasthan addressed this issue?

- Department of Rural Development of the Government of Rajasthan has held numerous discussions which resulted in a workshop.
- It involved worker groups, CSO's who interacted directly with the aggrieved workers, administrative officers from the village level to the State level, and bankers.
- They gave detailed guidelines on well-defined responsibility, timelines, monitoring and protocols to be followed by officials which resulted in a significant reduction in payment rejections.
- In a period of one year from the workshop, the Rajasthan government cleared Rs 380 crore worth payments to workers that were earlier stuck due to rejections.
- Currently, only 2.7% payments are pending for regeneration from the State government & 12.3% are under process by the banks.
- Its goal was to ensure that every person who worked gets their full payment on time.

What are the key takeaways from this?

- Open communication channels, eagerness to work with worker groups and a keen ear to the ground are necessary to successfully implement policy/laws.

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- This approach helped in benefitting thousands of MGNREGA workers in Rajasthan.
- Mandatory disclosure of information is required for any programme which can be seen in Rajasthan's Jan Soochna Portal (JSP).
- JSP is a single platform in the public domain providing information across 60 departments of over 104 schemes.
- The design and formats of each scheme should be arrived through dialogue involving government officials & numerous CSO's.
- In Rajasthan's MGNREGA, engagement with civil society organisations has been institutionalised through MGNREGA samvads some of which are attended by the Chief Minister.
- Hence if government is committed to its constitutional principles, then it must pay attention to multiple view points and listen to the voices of the marginalised.

3.3 Real Estate Regulatory Authority

Why in news?

RERA has infused governance & has cleansed black money in the hitherto unregulated real estate sector.

What is Real Estate Regulatory Authority?

- The RERA act aims to protect the interests of homebuyers & boost investment in the real estate sector.
- It aims to bring transparency & efficiency in sale/purchase of real estate by establishing RERA in each state to regulate real estate sector.

What are the provisions of the act?

- The Act stipulates that no project can be sold without project plans being approved by the competent authority.
- Every project has to be registered with the regulatory authority thereby putting end to the practice of selling properties based on false advertisements.
- This authority also acts as an adjudicating body for speedy dispute resolution.
- The promoters of the project have to maintain project based separate bank accounts to prevent fund diversion & they have to mandatorily disclose unit size based on carpet area.
- Either the promoter or the buyer has to pay equal rate of interest in case of default of project thereby reinforcing equity.

How did the various states implement the act?

- Since RERA came into force, 34 states &UT's have notified rules, 30 states &UT's has set up real estate regulatory authorities and 26 have set up appellate tribunals.
- The web-portal for project information was operationalised by 26 regulatory authorities which ensures full project transparency.
- **Maharashtra -** While the 2013 bill was pending in the Parliament, the government in Maharashtra enacted its own law in the Assembly in 2012 by taking Presidential assent under Article 254.
- The state law was not consumer-friendly & central government approved the law for its political gains which could have caused permanent damage to the home buyers of Maharashtra.
- Later this anomaly was corrected by repealing the state Act under section 92 of RERA by invoking the provision under the same Article 254.
- **West Bengal -** In 2017, West Bengal has enacted its own state law — the West Bengal Housing Industry Regulation Act (WBHIRA) knowing well that there was already a central law on the subject.
- Despite multiple efforts by the Centre, West Bengal refused to implement RERA, causing irreparable loss to home buyers.

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How does RERA establish cooperative federalism?

- Though the Act has been piloted by the Central government, appointment of regulatory authorities & appellate tribunals, notifying the rules are done by state governments.
- These regulatory authorities are required to manage the day-to-day operations, resolve disputes, and run an active and informative website for project information.
- What SEBI is to the securities market, RERA is to the real estate sector.
- RERA provisions are transformative in nature, has empowered consumers, helping in eliminating unfair trade practices & rectified power asymmetry prevalent in the sector.

3.4 Pradhan Mantri Ujjwala Yojana

Why in news?

- Recent report of US-funded Health Effect Institute reveals air pollution has caused 120,000 infant deaths in India.
- Two-thirds of this death is due to the use of solid fuels during the cooking.

What are other facts regarding this deaths?

- WHO report said that India witnessed about five lakh deaths per year due to unclean cooking fuels.
- According to experts, having an open fire in the kitchen is equivalent to burning 400 cigarettes an hour.

What are the steps taken to address this issue?

- NGT banned the sale and use of crackers in the National Capital Region during November 9-30.
- It has issued notices to 18 States/UT's where the air quality is "not satisfactory".
- Pradhan Mantri Ujjwala Yojana (PMUY) scheme was introduced looked to address the health hazards of mother & child caused due to the mass use of charcoal, wood and animal dung for cooking.

What are the details of the PMUY scheme?

- It scheme provides concessional LPG connections to 5 crore families especially the women living below poverty line (BPL) within 3 years & Rs 8,000 crore was allocated for the scheme.
- Beneficiaries can avail this scheme by providing ration card, bank account details and Aadhaar number.
- Government provides subsidy of RS 1,600 as support, primarily to enable the beneficiaries pay the security deposit and initial fitting charges & balance is recovered through instalments.
- The beneficiaries could also avail zero-interest EMI facilities for buying the stove and cost of the first refill.
- 14 parameters was used to prepare the beneficiary list which excludes relatively well off- any member of the family having a government job or any family owning irrigated land, etc.
- Later the scheme was extended to include those who would declare themselves being poor, not falling under any of the excluded criteria.
- In 2018 Budget, additional Rs 4,800 crore was allocated to serve an enhanced target of nine crore households.

How was the performance of the scheme?

- On December 11, 2019, Comptroller and Auditor General of India submitted a performance audit report of the scheme & said that 90 %of the target has been achieved.
- Hence annual allocation was cut by 58 % in budget which was enough to fund arrears to be reimbursed.
- The report said that average annual refill consumption for PMUY beneficiaries remained low when compared to the non-PMUY consumers.
- It was due to poor financial condition & there were instances of diverting the domestic cylinders to commercial uses.
- The scheme was virtually withdrawn in September 2019 though no formal declaration was made.
- At that time only 3 states- Haryana, Punjab and Andhra Pradesh & 5 UT's were declared kerosene-free.

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How did the scheme helped during the pandemic?

- During the time of lockdown, the scheme was used to ease the livelihood pressure on poor households by combining it with Pradhan Mantri Garib Kalyan Yojana.
- The government declared that it will subsidise three 14.2-kg LPG cylinders in full for the beneficiaries from April to June.
- On July 8, 2020, the scheme was extended till September 30 for those who could not order the three cylinders due to the pandemic.
- Parliamentary committee on petroleum raised concern with the closure of the scheme.
- In its report tabled in Parliament before the pandemic outbreak, it recommended to extend the scheme to the urban and semi-urban slum areas to further LPG coverage to the masses.
- In view of the report on pollution-led infant deaths, the government should reconsider scheme after normalcy is restored.

3.5 Media Regulation

What is the issue?

- The Mumbai Police recently filed a supplementary chargesheet containing WhatsApp messages between Republic TV Editor Arnab Goswami and former Broadcast Audience Research Council CEO Partho Dasgupta.
- The incident has brought to light the shortfalls in media regulation.

What are some of the concerns?

- Since the above event, the discussions in the media have been about –
    - ethical transgressions
    - manipulating institutional arrangements to show increased audience reach
    - breaching the line meant to protect the autonomy and efficacy of regulating bodies and external research entities
- For a news ombudsman, the main issue is that an effective institution of self-regulation for the Indian media does not exist.

How does media regulation work in India?

- There are four bodies in India for media regulation.
- The first is the **Press Council of India**, created through an act of Parliament.
- It is headed by a former Supreme Court judge.
- Its mandate is to preserve the freedom of the press and to maintain and improve the standards of newspapers and news agencies in India.
- It has 28 members including editors, senior journalists, media managers, representative from a news agency.
- Besides it also has one nominee each from the Bar Council of India, the UGC, and the Sahitya Akademi as well as members of the Lok Sabha and the Rajya Sabha.
- To note, the regulatory tilt is towards the executive writ.
- The second is the **News Broadcasting Standards Authority** created by the News Broadcasters Association (NBA), an industry body.
- The broadcast industry has a third body, the **Broadcasting Content Complaints Council**.
- This is to deal with complaints against entertainment and general segment television programmes.
- A fourth body was created by those who left the NBA, called the **News Broadcasters Federation**. This is promoted by Mr. Goswami's Republic TV.
- A close examination of the functioning of these bodies reveals their inability to implement their primary mandate of ensuring freedom while adhering to agreed ethical and professional standards.

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How will in-house mechanisms work?

- Self-regulation would ensure freedom not only from the government, but also from other vested interests.
- If media organisations are serious about effective self-regulation, the need of the hour is to actively build in-house mechanisms.
- For instance, the Readers' Editor (RE) of The Hindu is an independent, full-time internal ombudsman.
    - Readers and other complainants have a designated pointsperson to reach out to.
    - The RE not only examines all the complaints that are received, but also effects course correction if the paper errs.
- The Organization of News Ombudsmen and Standards Editors has spelled out the responsibility in this regard in clear terms:
    - promote the values of accuracy, fairness and balance in news reporting for the public good
    - assist media organizations to provide mechanisms to ensure they remain accountable to consumers of their news
- Many studies reveal that having an internal mechanism often helps news media organisations to improve transparency.
- It also helps in developing trust with the audience.

What is the way forward?

- The legal route rarely addresses the importance of a toxic-free information ecology.
- Unless the news-consuming public demands for an independent, internal ombudsman, the ethical conundrum will continue to haunt us.
    - E.g. A programme, 'Bindas Bol-UPSC Jihad', by Sudarshan TV was found offensive by almost everyone from the Information and Broadcasting Ministry to the apex Court.
    - But that did not prevent the spread of venom and wrath in the public sphere.

3.6 Companies (Corporate Social Responsibility Policy) Amendment Rules, 2021

Why in news?

The Ministry of Corporate Affairs has published The Companies (Corporate Social Responsibility Policy) Amendment Rules, 2021 to further amend the Companies (CSR Policy) Rules, 2014.

What is CSR?

- CSR is a corporate initiative to assess and take responsibility for the company's effects on the environment and impact on social welfare.
- CSR projects are taken up to promote positive social and environmental change.
- Currently, the CSR rules apply to the companies with any of the following criteria:
    i. a net worth of Rs 500 crore or more
    ii. a turnover of Rs 1,000 crore or more
    iii. net profit of Rs 5 crore or more
- These companies are required to spend 2% of their average profits of the previous 3 years on CSR activities every year.

What are the key changes?

- **Registration** - The Amendment substitutes Rule 4 which implements CSR in the companies.
- Every entity, which intends to undertake any CSR activity, shall register itself with the Central Government.
- This is to be done by filing the form CSR-1 electronically with the Registrar, with effect from the 1st day of April 2021.

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- The provisions of this sub-rule shall not affect the CSR projects or programmes approved prior to the 1st day of April 2021.
- Form CSR-1 shall be signed and submitted electronically by the entity.
- It shall be verified digitally by a Chartered Accountant in practice or a Company Secretary in practice or a Cost Accountant in practice.
- **Action plan** - Under Rule 5, the CSR Committee shall formulate and recommend to the Board, an annual action plan in pursuance of its CSR policy.
- This shall include the following, namely:
    i. the list of CSR projects or programmes that are approved to be undertaken in areas or subjects specified in Schedule VII of the Act
    ii. the manner of execution of such projects or programmes
- **Impact assessment** - Under Rule 8, any corporation with a CSR obligation of Rs 10 crore or more for the 3 preceding financial years would be required to hire an independent agency.
- This is to conduct impact assessment of all of their project with outlays of Rs 1 crore or more.
- Companies will be allowed to count 5% of the CSR expenditure for the year up to Rs 50 lakh on impact assessment towards CSR expenditure.
- **Transparency** - Under rule 9, the Board of Directors of the Company shall mandatorily disclose the composition of the CSR Committee.
- The CSR Policy and Projects approved by the Board should also be disclosed on their website, if any, for public access.

What are the changes required for implementing agencies?

- A large number of companies conduct CSR expenditure through implementing agencies.
- But the new amendment mandates that the companies authorise either a Section 8 company or a registered public charitable trust to conduct CSR projects on their behalf.
    - A Section 8 company is a company –
        i. that is registered with the purpose of promoting charitable causes
        ii. that applies profits to promoting its objectives
        iii. that is prohibited from distributing dividends to shareholders
- Further, all such entities will have to be registered with the government by 1 April 2021.

4. SOCIAL JUSTICE

4.1 Bombay HC Verdict on Sexual Assault - Mandatory Minimum Sentencing

What is the issue?

- The Bombay High Court has acquitted a man of sexual assault charges under the POCSO Act for groping a child; instead convicted him under the IPC for a lesser offence.
- Besides drawing criticism for its restricted interpretation of the offence, the ruling highlights the concept of mandatory minimum sentencing in legislation, including POCSO.

What is the case about?

- The convict was accused of luring the 12-year old prosecutrix to his house on the pretext of giving her a guava, and pressing her breast and attempting to remove her salwar.
- The sessions court had convicted the 39-year-old BanduRagde under Section 8 of the POCSO (Prevention of Children from Sexual Offences) Act.
    - Section 8 prescribes the punishment for the offence of sexual assault defined in Section 7 of the Act.

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- It sentenced him to three years in jail.
- The Nagpur Bench of the Bombay High Court reversed the decision of the sessions court.
- The High Court acquitted the man of sexual assault charges under the POCSO Act.
    - The allegation was said to be not serious enough for the greater punishment prescribed under the law.
- It upheld the conviction under sections that carry a lesser minimum sentence of one year under the Indian Penal Code (IPC).

Why was he acquitted of charges under the POCSO Act?

- The offence under POCSO carried a higher punishment.
- So the court reasoned that a conviction under it would require a higher standard of proof and allegations that were more serious.
- Section 7 of the Act says –
    - "Whoever, with sexual intent touches the vagina, penis, anus or breast of the child or makes the child touch the vagina, penis, anus or breast of such person or any other person or does any other act with sexual intent…"
- The court said that since the convict groped the prosecutrix 'over her clothes', this indirect contact would not constitute sexual assault.

Is such a reading of the law unusual?

- Such restrictive reading is not uncommon, especially in POCSO cases.
- E.g. In State v Bijender (2014), a Delhi court acquitted a man under the POCSO Act and instead convicted him of IPC offences.
    - A seven-year-old girl had testified that the convict took her into the bathroom by force, slapped her, and tore her jeans.
    - The Special Court held that the act of tearing the clothes of the victim did not constitute physical contact even if sexual intent was present.
    - The court restrictively interpreted the lack of physical contact with sexual organs to mean that there was no physical contact.
- Section 7 of the POCSO Act however recognises "any other act with sexual intent which involves physical contact without penetration" to be sexual assault.

What is a mandatory minimum sentence?

- Section 8 of the POCSO Act carries a sentence of rigorous imprisonment of 3 to 5 years.
- However, imposing the minimum sentence is mandatory.
- Minimum sentences have been prescribed for all sexual offences under the POCSO Act barring the offence of sexual harassment.
- If a statute has prescribed a minimum sentence, courts do not have the discretion to pass lighter sentences.
    - This is irrespective of any specific circumstances that the case or the convict might present.
- In a 2001 ruling, the Supreme Court held the following:
    - where the mandate of the law is clear and unambiguous, the court has no option but to pass the sentence upon conviction as provided under the statute
    - the mitigating circumstances, if established, would authorise the court to pass a 'reasonable' sentence of imprisonment or fine but not less than the minimum prescribed

What is the need for a mandatory minimum sentence?

- A mandatory sentence is prescribed to underline the seriousness of the offence.
- It is often claimed to act as a deterrent to crime.
- In 2013, criminal law reforms introduced in the aftermath of the 2012 Delhi gang rape prescribed mandatory minimum sentences.

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- It applied for criminal use of force and outraging the modesty of a woman, among other charges.

- Mandatory minimum sentences are also prescribed in some cases to remove the scope for arbitrariness by judges using their discretion.

What are the concerns with mandatory sentencing?

- Mandatory sentencing regimes are put in place to remove judicial discretion.
- But it is felt that the discretion is merely shifted within the system to the police, and is not removed.
- Studies have shown that mandatory sentencing in laws lead to fewer convictions.
- When judges perceive that the punishment for the offence is harsh, they might prefer to acquit the accused instead.
- To note, after conviction, a separate hearing is conducted to award sentence.
- In the process, certain factors such as the following are considered -
  i. the accused being a first-time offender with potential for reformation
  ii. the accused being the sole breadwinner of the family
  iii. the accused's age and social background
  iv. the seriousness of the offence, etc
- The absence of the opportunity to consider such factors, and instead prescribe a mandatory sentence, pushes judges in some cases towards acquitting the accused.
- Minimum sentences under the POCSO Act are also seen to be very high.
- Legal experts have argued that mandatory sentences are counterproductive to the aim of reducing crime or acting as a deterrent.

5. HEALTH

5.1 Avian influenza Outbreak

Why in news?

After India declared itself free from avian influenza 3 months earlier, new cases of avian influenza subtypes have been reported now.

Where are the cases reported?

- Four States — Rajasthan, Madhya Pradesh, Himachal Pradesh and Kerala -are the epicentres in this outbreak.
- In Haryana, Jharkhand & Gujarat, thousands of poultry birds have died but the cause of death is still unknown.
- The two subtypes (H5N1 & H5N8) have targeted different birds — crows in Rajasthan & Madhya Pradesh, migratory birds in Himachal Pradesh and poultry in Kerala.
- H5N1 has caused deaths of over 2,000 migratory birds in Himachal Pradesh.
- H5N8 led to the death of thousands of poultry in Kerala, hundreds of crows in Rajasthan and Madhya Pradesh.

How did the virus transmit?

- Migratory birds have been largely responsible for long-distance transmission of the virus into India.
- It also spreads through local movement of residential birds and poultry.
- Movement of men and material from poultry farms too has been a cause for further spread.

What are the measures undertaken to control the outbreak?

- On Wednesday over 69,000 birds, including ducks and chickens, were culled in Alappuzha & Kottayam as per India's 2015 National Avian Influenza Plan.

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- Other States have been asked to be vigilant of any unusual deaths or disease outbreak signs amongst birds, particularly migratory ones.
- States have been asked to strengthen bio security of poultry farms, disinfection and proper disposal of dead birds.

How was the global outbreak?

- As per European Food Safety Authority 561 avian influenza were reported in 15 European countries and the U.K between August-December.
- H5N1 and H5N8 were two of three subtypes found in Europe & it was predominantly found in wild birds, and a few in poultry and captive birds.
- Genetic analysis confirmed that spread from Asia to west-central Europe likely to cause persistent circulation of this virus strain in wild birds in Asia.

Does it transmit to humans?

- Though avian influenza virus cross the species barrier and occasionally infecting humans, but human-to-human spread is reported rarely.
- Mutations of an avian influenza A virus and a human influenza A virus in a person can create a new influenza A virus.
- This can result in sustained transmission between humans thus increasing the risk of a pandemic influenza.
- Hence efforts should be taken to control the outbreaks & genome sequencing of virus samples helps in tracking the evolution of the virus.

5.2 Gearing up - India's Vaccination Programme

What is the issue?

- India has planned to roll out the vaccination programme for COVID-19 from 16 January 2021, with doctors, nurses and sanitation workers as part of the priority group to receive first.
- As India starts on vaccination, it is highly essential that the government bolsters public trust in the vaccination process.

What is the plan?

- India has approved two vaccines in emergency-use mode:
    1. Covishield by the Serum Institute of India, Pune
    2. Covaxin by Bharat Biotech Ltd.
- While it is still unclear who gets which vaccine, there are more doses of Covishield available at present than Covaxin, almost five to one.
- It could take a few months before the 30 million prioritised groups get one of their doses.
- Others, those in the 50-plus age group and those with comorbidities, will have to wait much longer.
- Notably, vaccines such as those by Pfizer and Moderna are also not made available for import by the private sector.

What are the concerns though?

- Covaxin belongs to a league of vaccines that has been approved without establishing its efficacy i.e. the extent to which vaccination protects from COVID-19.
- There have been differences among scientists such as on the best testing strategy, treatment, extent of infection.
- But the differences are more divisive for the approval of Covaxin.
- There is declining rate of infections and low relative mortality in India.
- So, India is not in as dire a state of emergency that requires it to approve an untested vaccine, when more clarity would likely have come by March 2021.

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- Also, reports have emerged of trials in Bhopal where volunteers were seemingly under the impression that they were getting a protective shot when some were likely getting a placebo.
    - In medicine, a placebo is a substance, pill, or other treatment that appears to be a medical intervention, but is not.
    - Placebos are used when testing new drugs or sometimes when a patient has imagined his/her illness.
- Volunteers also complain of no medical follow-up when some developed symptoms such as fever, body pain and loss of appetite.

What is the need for caution?

- The vaccine may eventually prove protective. The adverse symptoms reported may also be seen as part of the variety of the human body's response.
- However, a vaccine that evokes distrust is self-defeating.
- With childhood immunisation, India has proven that it has the infrastructural backbone to inoculate millions.
- The dry runs to test the Co-WIN management software have reportedly given authorities valuable feedback on perfecting the prospective rollout.
- However, this could be undone if people do not turn up, and worse, if vaccine hesitancy rises.

What lies ahead?

- The pandemic gave India an opportunity to examine its dispensation of health care.
- Along with improving access, the government must seriously examine the conduct of vaccine trials.
- The government must work hard to bolster public trust in vaccination, and monitor the vaccination process for adverse reactions.
- On the other hand, Covaxin is best kept as a backup in the event of a sudden surge of cases till its efficacy data are available and acceptable.

5.3 Vaccine Hesitancy – COVID-19

What is the issue?

The poor uptake of the COVID-19 vaccine in India indicates the gaps in government's approach in building public trust in this regard.

How is the vaccine uptake rate?

- Tamil Nadu, perceived to be largely health literate, and relatively well-equipped with health infrastructure, achieved only over 16% of its targeted coverage on the launch day (16 January 2021).
- On the second day of vaccination, the compliance further dropped.
- In some States, vaccination was suspended.
- A marked favouring of the Covishield vaccine over Covaxin was also noticed in multiple States.
- The poor rate of uptake of the vaccine in most States only indicates that the government has not taken the people of the country along in this process.

Was vaccine hesitancy addressed?

- A vaccine, unequivocally, is a public good.
- But the lack of transparency surrounding the roll-out of the COVID-19 vaccines has done little to enhance trust in this experiential principle.
- Studies measured high levels of vaccine hesitancy among the general population.
- It remains the same with health-care workers, the first in the line list of people to receive free vaccination.
- Clearly, vaccine hesitancy was not addressed sufficiently, or not taken seriously enough.
- The clearance for Emergency Use Authorisation (in Covaxin, it is emergency use authorisation in 'clinical trial mode') came.

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- Following this, there was a high-handed announcement with little attempt to put out compelling evidence in the public domain.
- Nor were the multiple queries addressed in press conferences.
- The inability of the government, and the agencies involved, to amicably resolve controversies surrounding the clearance for Covaxin has had a direct consequence in vaccine uptake.

5.4 Malnutrition in India

What is the issue?

Data's of various Nutritional indicators are expected to fall in the upcoming phase of NFHS-5 due the COVID-19 pandemic.

Why it is expected to fall?

- Three deficits significantly account for the fall in the data- dietary deficit, information deficit, inequitable market conditions.
- Apart from this, loss of livelihoods, reduced food consumption among the poor & disruption of government nutrition programmes are seen as other factors.

What does dietary deficit indicate?

- It is found among at least 40 % of our population of all age groups.
- This data is substantiated by the reports of the National Nutrition Monitoring Bureau's Third Repeat Survey (2012), NFHS 4, 2015-16, the NNMB Technical Report Number 27, 2017.
- The NHHS-4 and NFHS-5 survey reveals that acute dietary deficit exists among infants below two years & stunting and wasting exist for the infants below six months.
- This is caused either by foetal malnutrition or maternal dietary deficit because current interventions are not focussing the protein-calorie-micronutrient deficit.

What does information deficit indicate?

- Information deficit exists at the household level, especially among lower-income families.
- National IEC (information, education and communication) programme is not available to reach targeted households in order to make the required behavioural change.
- This includes the importance of balanced diets in low-income household budgets, proper maternal, child and adolescent nutrition and healthcare.
- Though IEC and behavioural change is highlighted in all our early Five-Year Plans but successive governments fail to make it happen.

What do inequitable market conditions reflect?

- This account for major cause of dietary deficiency and India's chronic malnutrition.
- Inequitable market conditions deny affordable & energy-fortified food to children, adolescents & adults in lower-income families.
- Though market has lots of expensive fortified energy food &beverages, it is not affordable for low-income groups except non-nutritive junk that cost about Rs 5.
- A study conducted by Karnataka Multi-sectoral Nutrition Pilot Project in 2018 reflects that there is a market demand of 42 million tonnes of low-cost energy food per year.
- And it is possible to produce nutritive fortified energy food for children within Rs 5 which can have 380 calories but no private entrepreneur provides it.
- It also says that there is direct relation between high incidence of stunting and wasting among children, low BMI among adolescents & the lack of low-cost fortified food.

What are the issues with current nutritional interventions?

- National Nutrition Policy 1993 is not updated in accordance with the latest surveys and research findings & interventions are not prioritised with respect to the current facts.

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- Budgetary allocations for healthcare are insufficient & ICDS and its monitoring systems are not upgraded.
- The current programmes are not effectively targeting the root causes of malnutrition.
- Unless there is a disease outbreak efforts are not taken to address malnutrition & government intervenes only during disease outbreak.

What can be the future course of action?

- Government should analyse current nutrition-related programmes & find out why it is not able to reduce malnutrition faster.
- Highly malnourished districts have to be identified & additional interventions should be made in these areas.
- Government should show seriousness & start addressing this issue urgently through new ideas and innovations.
- Raising the diet of people from subsistence level to high level of nourishment will improve the nutritional indicator among children, adolescents and adults.
- Government/civil society should provide IEC to the community about malnutrition, its causes & implement programmes to address them.

6. INDIA & ITS NEIGHBORHOOD

6.1 India-Nepal relations

Why in news?

Amidst Nepal's political chaos, Nepal's Foreign Affairs Minister visited New Delhi for the 6th meeting of India-Nepal Joint Commission.

What was discussed in the meeting?

- It was more focused on confidence-building measures- exchange of remarks on progress made since last meeting, how to take forward several bilateral initiatives.
- They discussed about the expanding the **Motihari-Amlekhganj petroleum pipeline** to Chitwan & establishing new pipeline on the eastern side connecting Siliguri to Jhapa in Nepal.
- They discussed about the operating procedures for commencing the upgraded 1st passenger railway line between India & Nepal from Jaynagar to Kurtha via Janakpur.
- Other cross-border rail connectivity projects, including Raxaul-Kathmandu broad gauge railway line were also discussed.
- Nepal expressed its support for India's permanent membership of an expanded UN Security Council.
- It also emphasised on the need for facilitating cross-border movement of people & goods leading to sub-regional cooperation.
- However Nepal's demand to include the boundary issue in the Meeting was not supported by India.

How is India-Nepal relationship on the development front?

- The recently inaugurated Integrated Check Posts (ICPs) at Birgunj and Biratnagar helps in seamless movement of people and trade between two countries.
- The construction of 3rd ICP at Nepalgunj was already commenced & the new ICP at Bhairahwa will begin shortly.
- Since Nepal relies on India's seaports for trade and its goods are transported by road, ICP are expected to ease trade and transit.
- India supported to develop 2 more cultural heritage projects in Nepal-Pashupatinath Riverfront Development &Bhandarkhal Garden Restoration in Patan Durbar.
- This is significant at the time when China is exploring all avenues to disrupt Nepal's natural choice in policy-making.

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- The joint hydropower projects, including the proposed Pancheshwar Multipurpose Project, will get positive momentum following this round of meeting.

How is Nepal's democracy functioning?

- There is growing disenchantment among the Nepali masses over the increased centralisation of power.
- The failure of the Provincial System to address developmental issues, misuse of Presidential authority & unprecedented corruption calls for re-setting Nepal's democracy.
- Large sections of the people wish to restore the cultural Monarchy in place of Presidential system and to re-establish the certain traditional ways to governance.
- In late December 2020, he dissolved the House of Representatives which was termed unconstitutional by the experts.
- The country's Supreme Court is hearing writ petitions against Mr. Oli & the Court has called for serious constitutional interpretation.

6.2 Unresolved Fisheries conflict in Palk Bay

Why in news?

- India lodges strong protest over the death of four fishermen in collision with Sri Lankan Navy Vessel.

What are the reasons for their death?

- Fishermen in the Tamil Nadu say the four were killed in an attack by the Sri Lankan Navy.
- But Sri Lankan Navy mentions that they died when their trawler collided with a naval vessel while trying to avoid getting seized.
- India has lodged a strong protest with the Sri Lankan authorities & sought the early release of fishermen arrested in their water and their boats.

Why such incidents are recurring?

- Poor fishermen's are driven by their trawler owners who force them to enter into Sri Lankan waters.
- They get killed or arrested when they caught by Sri Lankan Navy thereby leading to conflict.
- Even Political leaders in Tamil Nadu rarely acknowledge that the fishermen's contribute immensely to the problem by crossing the territorial waters.

What are the steps taken to resolve this issue?

- Some years ago both the countries decided to create a Joint Working Group to find a permanent solution to this issue.
- They agreed that there would be no violence or loss of life in handling the fishermen and a hotline would be established between the respective Coast Guards.
- Unfortunately the hotline is yet to be operationalised and deaths continue to occur.
- Less than a month ago both the countries resumed discussions through their Joint Working Group after a three-year gap.
- Attempts are also made to arrive at negotiated settlement through direct talks involving fishermen from both sides but this remained stand-still.

What can be done now?

- This unresolved fisheries conflict in the Palk Bay is causing unacceptable toll of lives.
- Sri Lanka favours joint patrolling by both countries and a ban on unsustainable fishing practices such as bottom trawling by Tamil Nadu fishermen.
- But fishermen demand for a lengthy phase-out period.
- Hence these bottom trawlers should be replaced with deep sea fishing vessels to avoid exploiting the remaining fishery resources on the Sri Lankan waters.

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- A comprehensive solution which will curtail unauthorised fishing and help in orderly sharing and sustainable use of resources by fishermen from both sides needs to be arrived.

6.3 Fear of Coup in Myanmar

Why in news?

Political tensions flare in Myanmar which can mount to coup as military refuses to accept election results.

What is the issue?

- On the November 2020, general election was conducted & National League for Democracy (NLD) led by Aung San Suu Kyi, won a landslide victory in the election.
- However the military says that this general election is full of irregularities and therefore results are not valid.
- The military has demanded that United Elections Commission (UEC) of Myanmar which oversees elections to prove at a special session of new parliament that the elections were free and fair.

How has Myanmar Constitution evolved?

- It was the military that drafted the 2008 Constitution and put it to a questionable referendum in April that year.
- The military made sure that it safeguards its own role and supremacy in national affairs present in the Constitution.
- Under its provisions, the military reserves for itself 25% of seats in both Houses of Parliament, to which it appoints serving military officials.
- Also a political party which is a proxy for the military contests elections.
- However the NLD had boycotted the referendum, as well as the 2010 elections that were held under the Constitution.
- In the recent election, military share of seats fell because of the NLD's sweep.

What does military say about election results?

- A military spokesman said they found 8.6 million irregularities in 314 areas across all states and regions.
- They indicated the possibility that people had voted more than once or had engaged in some other voting malpractice.
- However the UEC has said it had found no evidence of any voting malpractice or fraud & each vote was counted transparently and it was witnessed by election candidates, the media, observers etc.

Why there exists a fear of coup?

- Myanmar's democratic transition is in progress & 2020 election results are seen by the NLD as a mandate for its plan of constitutional reform.
- NLD wants to do away with the military's role in politics and governance however this will not be easy given the tight constitutional restrictions for amendments.
- But the hybrid system that exists now is a huge shift away from what it was until 2011, the year military decided to release Suu Kyi from her nearly two-decade-long house arrest.
- And Suu Kyi is more reconciliatory towards the Army & she went to the extent of defending the military at the International Court of Justice against accusations of atrocities on the Rohingya.
- The army's assertion about election results has created a fear of coup in the Nation.

How did World Nations respond to the army assertions?

- Joint statement was issued by the USA, the European Union & diplomatic missions of 15 other countries in Yangon excepting India & China.
- They supported democratic transition in Myanmar and efforts to promote peace, human rights, and development in the country.
- They demanded peaceful convening of Parliament & urged the military, and all other parties in the country, to adhere to democratic norms.

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- They opposed any attempt by the military to alter the outcome of the elections or impede Myanmar's democratic transition.

7. INTERNATIONAL ISSUES

7.1 Reframing India's Foreign Policy Priorities

What is the issue?

With new developments likely in international relations for 2021, here is a look at its dimensions and relevance for India.

What are the recent developments in international relations?

- Leadership change in the United States is perhaps the most awaited change.
- But it is unlikely to bring about a major power shift in the international arena.
- Even before the changeover, and despite the promise of a Biden presidency to invigorate the U.S.-Europe axis, Europe has only revived its China links.
- It has concluded in principle the negotiations for an EU-China Comprehensive Agreement on Investment.
    - This is an indication that Europe values its economy more than its politics.
- Many countries are likely to seek closer economic relations with China now. This would be a challenging aspect in India's relations.
- Major changes are afoot in Eurasia and West Asia which could lead to significant shifts.
- Russia is beginning to display greater interest in the affairs of countries on its periphery.
    - Together with strengthening ties with China and reaching an entente with Turkey, this seems to signal reduced interest in countries such as India.
- In West Asia, the Abraham Accords, leading to a realignment of forces in the Arab world, have sharpened the division between the Saudi Bloc and Iran-Turkey.
- The situation has not reduced the risk of a confrontation between Iran and Israel. This poses problems for India, since both have relations with it.
- Meanwhile, China demonstrates a willingness to play a much larger role in the region, with plans for a 25-year strategic cooperation agreement with Iran.
- Saudi Arabia could find 2021 challenging, with a Biden Administration taking charge in Washington.

What does a stronger China signify?

- China is the only major country which had a positive rate of growth at the end of 2020.
- Its economy is poised to grow even faster in 2021.
- Militarily, China has further strengthened itself. It now seeks to dominate the Indo-Pacific Ocean with its announcement of the launch of its third aircraft carrier in 2021.
- Simultaneously, it is seeking to strengthen its military coordination with Russia.
- In effect, China's position across Asia is, if anything, stronger than in 2020.
- India cannot expect any Chinese concessions in Eastern Ladakh, until India 'makes amends'.

Is India isolated?

- As far as the above developments are concerned, at the start of 2021, India seems to be isolated.
- No breakthrough in Sino-Indian relations has, or is likely to occur, and the confrontation between the armed forces is expected to continue.
- India currently plays no significant role in West Asia. India-Iran relations today lack warmth.
- In Afghanistan, India has been marginalised as far as the peace process is concerned.

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- India's charges against Pakistan of sponsoring terror have had some impact globally.
- But it has further aggravated tensions between the two neighbours.
- In the process, this also helped Pakistan to cement its relations with China.
- While hostility between India and Nepal appears to have reduced lately, relations continue to be strained.
- In all, as India-China relations deteriorate, India's neighbours are not averse to taking sides, increasing India's isolation.
    - India's foreign policy objectives are to widen its sphere of influence, enhance its role across nations.
    - It strives to make its presence felt as an emerging power in an increasingly disruptive global system.
    - But India's voice and counsel are seldom sought, or listened to at present due to some changing perceptions.

What are the changing perceptions?

- Indian diplomats conduct their activities with a high degree of competence, but they are possibly hampered by other factors.
- The kind of policy choices India has adopted in the recent period has possibly altered the perception of India in certain quarters.
    - E.g. India's closeness to the U.S. has resulted in the weakening of its links with traditional friends such as Russia and Iran
- There is possibly a shift in balance of power in the region in which India is situated.
    - The rise of China, and the enlarging conflict between the two biggest powers in Asia, compels many nations to pick sides in the conflict.
- A less obvious, but perhaps more relevant aspect, could also be that India's foreign policy suffers from an ideational vacuum.
- It is not the sharp decline in the economy, problems caused on account of the pandemic, or the growing polarisation in values across nations and societies.
- It is instead more due to India's inability or failure in the ideational realm that lies at the root of our foreign policy inadequacies.

Where all has India missed?

- Currently, India remains isolated from two important supranational bodies of which it used to be a founding member.
    - These are the Non-Aligned Movement (NAM) and the South Asian Association for Regional Cooperation (SAARC).
- Efforts to strengthen newer institutions such as the BIMSTEC have hardly been successful.
- India has opted out of the Regional Comprehensive Economic Partnership (RCEP) (a majority of Asian countries are members).
- It has also failed to take advantage of the RIC (Russia, India and China grouping) even as relations with Russia and China have deteriorated.
- On the other hand, India's foreign policy imperatives, across Asia and South Asia in particular, seem to be a mixture of misplaced confidence -
    - excessive confidence (as in the case of Nepal)
    - a lack of understanding of the sensitivities of neighbours such as Bangladesh and long-time friends (such as Vietnam and Iran)
    - according excessive importance to the policy needs and pressures of nations such as the U.S

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7.2 South Korea's Falling Population

Why in news?

For the first time in history, the number of deaths recorded in South Korea over the past year exceeded births, causing the country's population to decline.

What is the current scenario?

- In 2020, around 3.07 lakh people died in South Korea, and only 2.75 lakh babies were born.
- The number of new births fell by 10% from 2019.
- At the end of 2020, the country's population was less by 20,838 from the year before.
- The growth rate of South Korea's population declined from 1.49% in 2010 to 0.05% by 2019.
- If this trend continues, the government predicts that the population will drop from the current 5.18 crore to 3.9 crore by 2067. Consequently, 46% of people will be above 64 years of age.

Why is South Korea's population declining?

- In many parts of the world, greater economic development and lower fertility rates often go hand in hand.
- South Korea is a highly industrialised nation.
- It already has the world's lowest birth rate at 0.92 as of 2019; the number represents the average number of children a woman has.
- This figure is substantially lower than the fertility rate of 2.1 required for replacement of the existing population.
    - In India, the fertility rate is 2.2, as per 2019 figures.
- Some of the reasons believed to be behind the low birth rate include reluctance to opt for maternity leave.
- Another reason said is the high real estate prices, which dissuade young couples from buying a house and starting a family.

What is the government response?

- South Korea's government has said that it would bring in "fundamental changes" to address this trend.
- In December 2020, President Moon Jae-in announced policies such as giving cash incentives for families.
    - The scheme, which starts in 2022, will provide a one-off payment of 2 million won (around Rs 1.35 lakh) for each child born, to help cover parental costs.
- Until the baby turns one, the government will pay an additional 300,000 won (around Rs 20,000) every month.
- After 2025, the incentive will be raised to 500,000 won (around Rs 34,000).

Is a dwindling population always undesirable?

- Dwindling population has mixed effects.
- When the young population in a country declines, it creates labour shortages.
- This would have a major detrimental impact on the economy.
- More older people could also mean an increase in demands for healthcare and pensions.
- This further burdens the country's social spending system when fewer people are working and contributing to it.
- However, on the other hand, low birth rates can improve the standard of living in low-income countries.
- In such countries, fewer children being born would mean greater access to already deficient public services such as health and education.
- Also, many experts are dismissing the notion that more number of aged people would cause healthcare costs to shoot up.
- This is because, around the world, not just life expectancy, but "healthy life expectancy" has risen.

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- This means that on average, people would be spending more years in good health than ever before.
- Another effect of a declining population is that it would provide an impetus to migration.
- With labour shortages in such countries, they would have to open up borders and allow more immigrants to come in and work.
- This, in turn, would cause their society to become more cosmopolitan.

What is the projection for world population?

- In July 2020, a Lancet analysis said that the world population will peak at 973 crore people in 2064.
- It is said to decline from this peak to 879 crore in 2100.
- In India, the population is expected to reach a peak of 160 crore in 2048, up from 138 crore in 2017. It will decline by 32% to 109 crore in 2100.
- In the study, the global total fertility rate (TFR) is predicted to steadily decline from 2.37 in 2017 to 1.66 in 2100.
- The TFR is projected to fall below 2.1 in 183 countries.
- In 23 countries including Japan, Thailand, Italy and Spain, it is projected to shrink by more than 50%.
- In India, the TFR is projected to continue a steep decline until about 2040, reaching 1.29 in 2100.

7.3 Saudi Arabia ended its Blockade with Qatar

Why in news?

In the recently held Gulf reconciliation summit at Al-Ula, Saudi Arabia & its allies decided to end their blockade with Qatar.

Why was the blockade imposed?

- In 2017, Saudi Arabia, under the leadership of Crown Prince Mohammed bin Salman, the UAE, Bahrain and Egypt imposed the blockade and severed the diplomatic ties.
- It accused Qatar for supporting terrorism & issued 13 demands for the blockade to be lifted.
- This included shutting down the Qatar-funded TV network-Al Jazeera, closing a Turkish military base & reducing diplomatic relations with Iran.

How did Qatar react to this?

- It did not bend towards the Saudi's demand despite heavy economic cost.
- It invited more Turkish troops thereby strengthening its ties with Turkey.
- Moreover, it played an important role in the U.S.-Taliban deal & continued to host talks between Taliban representatives and the Afghan government.
- Iran offered Qatar global connectivity when the Saudi and Emirati airspaces were closed.
- Al Jazeera TV network is still functioning.

Why was the reconciliation made now?

- Saudi's plan to isolate Qatar backfired & in the last weeks of the Trump administration, MBS and his allies realised their strategic mistake.
- Qatar has to make few concessions to reach the reconciliation i.e. 13 specific demands were replaced by a broad agreement.
- This includes non-intervention in other countries' internal affairs and cooperating to ensure regional stability and security.
- However this statement can be open to different interpretations for different sides & after the summit Qatar's Foreign Ministry has said that it had no intention of altering ties with Iran and Turkey.

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Why did Saudi resettled ties with Qatar now?

- The Saudi's U-turn could be the result of tactical rethink because the rift in the Gulf helped Iran and Turkey but failed to change Qatar's standing.
- Iran which was under U.S. sanctions got some financial relief from Qatari payouts for using its airspace.
- By lifting the air and sea blockades, the Saudis and the Emiratis could deny Iran of those funds.
- It can try to put up a united Arab regional front as Joe Biden is preparing to renegotiate the Iran nuclear deal.
- It may also hope to bridge the Gulf between two American allies which would help in warming the relation with Biden administration.
- Though this end of blockade is welcome note, it cannot be overlooked since this crisis was born out of an ill-thought-out Saudi-Emirati strategy of coercion.
- Saudi should learn from the mistakes & build the ties based on mutual interests and cooperation not on threats and coercion.

7.4 Fruits of incitement - US Capitol Hill Violence

Why in news?

An armed and angry mob of US President Donald Trump's supporters stormed Capitol Hill and clashed with police just as Congress convened to validate Joe Biden's presidential win.

What happened?

- The U.S., said to be the "greatest nation on earth," became hostage to an ugly attempted coup led by a mob, with slogans of support for outgoing President Trump.
- The mob was eventually ejected, and lawmakers went on to reconvene and formally certify the election results.
- Mr. Trump too finally committed to an "orderly transition."
- However, major social media platforms locked Trump's accounts for violating their civic integrity policies.
- This includes inciting violence with months of contentious posts that made baseless allegations about electoral fraud.

What was the immediate cause?

- The mob is said to have been methodically planned online via social media.
- The immediate trigger for the mob (Republican Trump's supporters) was the surprise victory of two Democratic candidates.
    - Democratic candidates Raphael Warnock and Jon Ossoff won in the 5 January 2021 run-off election in Georgia.
    - That election was necessitated by the fact that no candidate won 50% of the popular vote in the 3 November 2020 general election.
- Their win gives Democrats 50 seats in the Senate, which is tantamount to control of the upper chamber of Congress.
    - The incoming Vice-President, Kamala Harris, will cast a deciding vote in a tie.

What is the larger concern?

- The January 6 [2021] mob attack exposes sheer viciousness.
- The event is an "unprecedented assault" on the very soul of democracy.
- Also, there was more than two months of hateful rage online and offline following the 2020 election.
- This is a proof that political America is deeply polarised, brimming with anger and disenchantment at the ground realities.
- At the core is a sense of frustration that grips Middle America, including the white middle class and blue-collar workers, over the inevitable changes to the U.S. economy and society.

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- There is a view that the forces of immigration and globalisation have led to this explosive combination of racial prejudice and economic insecurity.
- In reality, Mr. Trump's harsh rhetoric exploited this sense of alienation and socioeconomic dysfunction for narrow political and personal gains.

7.5 U.S.'s 1776 Commission Report

Why in news?

The White House recently released the 1776 Commission report, just days before president-elect Joe Biden would take his oath in office.

Why was the commission set up?

- In September 2020, US President Donald Trump signed an executive order to set up a "national commission to promote patriotic education" in the country.
- The move was aimed at pleasing his conservative voter base in the run-up to the November 3 elections.
- The initiative, dubbed the '1776 Commission', is an apparent counter to The 1619 Project.

What is The 1619 Project?

- The 1619 Project is a Pulitzer Prize-winning collection of essays on African American history of the past four centuries.
    - It explores the Black community's contribution in nation-building since the era of slavery to modern times.
- The Project is a special initiative of The New York Times Magazine.
- It was launched in 2019 to mark the completion of 400 years since the first enslaved Africans arrived in colonial Virginia's Jamestown in August 1619.
- The project was initiated by Nikole Hannah-Jones, a MacArthur Grant-winning journalist.
- The collection aims to reframe US history by considering what it would mean to regard 1619 as the nation's birth year.

What is Trump's intent in countering it?

- By attacking The 1619 Project, Trump hoped to win the support of conservatives.
- The conservatives oppose its central idea that US history should be reframed around the date of August 1619.
- They insist that the nation's story should be told the way it has been over the years – beginning with the year 1776 or from 1788.
    - 1776 was when the Declaration of Independence was signed
    - 1788 was when the US Constitution was ratified
- Trump also threatened to withhold federal funding from public schools that used school syllabi based on the 1619 Project.
- He said The 1619 Project claimed that the US was "founded on the principle of oppression, not freedom".
- He opines that the Left has warped, distorted, and defiled the American story.

What is the 1776 Commission?

- When he set it up, Trump was lagging behind president-elect Biden in polls for the presidential race.
- With this move Trump sought to activate his right-wing supporters by doubling down on what he described as "cancel culture", "critical race theory" and "revisionist history".
- Trump said then that students in their universities were inundated with critical race theory.
    - "This is a Marxist doctrine holding that America is a wicked and racist nation, that even young children are complicit in oppression, and that our entire society must be radically transformed."
- Trump said a new "1776 Commission" would –

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i. "encourage our educators to teach our children about the miracle of American history"
ii. "make plans to honour the 250th anniversary of our founding,"
iii. "teach the youth to "love America"

- Reportedly, the 18-member commission formed by Trump includes no professional historians.
- It however has a number of conservative activists, politicians and intellectuals.

What does the report say?

- The following is the declared purpose of the President's Advisory 1776 Commission:
  i. to enable a rising generation to understand the history and principles of the founding of the United States in 1776
  ii. to strive to form a more perfect Union
- The report mentions that the above required a restoration of American education.
- This can only be grounded on a history of those principles that is "accurate, honest, unifying, inspiring, and ennobling."
- A rediscovery of the shared identity rooted in the founding principles is said to be the path to a renewed American unity and a confident American future.

7.6 Alexei Navalny and Russia

What is the issue?

- The latest happening in relation with anti-Putin activist Alexei Navalny is his detention on arrival from Berlin and the subsequent country-wide public protests.
- The events surrounding Navalny needs attention and here is a look at the likely impact of his presence and role in Russia.

Who is Alexei Navalny?

- Navalny is a lawyer-turned-activist.
- His political career started with the liberal opposition party, Yabloko, in the early 2000s.
- He subsequently broke away to form his own nationalist group.
- His anti-corruption campaigns began in the late 2000s.
- As a shareholder of large companies such as Rosneft, Gazprom, he tried to seek greater transparency about their financial dealings.
- He followed this up with several exposes of key members of the Russian elite.
- He came to prominence in 2008 after he started exposing corruption in Russian politics through a blog.
- In 2018, he was barred from standing against Putin in the presidential elections.
- He has also been arrested on multiple occasions.
- Since he started his political campaigning, Navalny has spearheaded many anti-corruption rallies in Russia.
- The latest, now viral exposure, targets Russian President Vladimir Putin himself.
- Navalny is considered to be the face of the opposition in Russia, a country that has long been known to eliminate dissidents and spies by poisoning them.

What happened to him recently?

- In August 2020, Navalny was put on ventilator support in a Siberian hospital after he consumed a cup of tea that is suspected to be poisoned.
  - While Navalny was returning to Moscow by air, he felt unwell as a result of which the plane made an emergency landing in Omsk.
  - Navalny had toxic poisoning.

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- Reportedly, Russian intelligence operatives trained in poisons, who had been trailing Navalny for years, were nearby him around this time.
- It was assumed that Alexei was poisoned with something mixed into the tea. It was the only thing that he drank that morning.
- At the request of his wife, he was taken to Germany where he completed his treatment and had a miraculous recovery.

What is the controversy around this?

- The German government felt that it had enough evidence to accuse the Russian security services of poisoning Mr. Navalny.
- The Germans claim that he was struck with the now infamous Novichok poison.
- This led to the European Union imposing sanctions on six Russian officials, including the head of the national security outfit, Federal Security Service (FSB) and a chemical research centre.
- Russia denies the accusations.
- But the Russian government still has many questions to answer about the poisoning.
- Also, this was not the first time that Navalny was faced with such a situation. As learnt, there had been several attempts to kill him.

What has Russia's reaction been?

- Russian authorities have denied playing a role in Navalny's poisoning.
- Last month, Russian president Vladimir Putin, who is entering his 22nd year in power, alleged that Navalny "relies on the support of US special services."
- Putin has even told journalists with a laugh that if Russian operatives wanted to kill Navalny, "they would have probably finished the job."

What is the significance of the current protests?

- The present charges against Navalny for detention include an old case in which he received a suspended sentence and a new case of fraudulent use of public money.
- Mr. Navalny denies all charges.
- The protests demanding his release are widespread, occurring in every major city, from the Pacific coast to the Baltic Sea.
- They resulted in about 3,000 people being detained and released.
- These are not the largest seen in Russia.
- However, what is different this time is that people from various strata and age groups joined the mostly peaceful protest actions.
    - Normally, Navalny-related demonstrations attract primarily youth (15-25 years old).
    - The fact that others joined the protest this time is significant.
- It is probably a reflection of the deep disillusionment with the drop in living standards.
    - This is sparked off by years of Ukraine-related sanctions and lower energy prices.
    - The conditions were worsened by the pandemic-driven economic downturn.

Why is it a challenge for the government?

- What would worry the government now is Navalny's call for 'smart voting' in the forthcoming parliamentary elections.
- All opposition voting for one person against the ruling party candidate is a cause of concern for the present government.
- Also, it is suggested that Navalny was used as a tool in the internal battles among the elites.

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- This is supported by the fact that some of the information that Mr. Navalny uses in his anti-corruption campaigns would be difficult, actually impossible, to find in publicly available sources.
- This kind of knowledge would have to come from someone not just inside, but very high-up in the system.

What is the likely impact?

- The anti-regime protests expectedly sparked off mixed reactions.
- Some suggest that these are the beginning of serious moves for regime change.
- Navalny's return from Germany is even compared to a similar journey in 1917 in a sealed train by iconic Bolshevik leader (Vladimir Ilyich Ulyanov) Lenin.
    - This was the precursor to the October revolution of that year.
- Notwithstanding the euphoria, Alexei Navalny is unlikely to be the catalyst that will lead to 'regime change' in Russia
- And whatever the reasoning, Mr. Navalny is no Lenin, even if the protests for his release continue.
- His nationalist platform is not currently capable of appealing to all sections of Russian society or convincing the political opposition to coalesce around it.
- However, it is clear that now, Mr. Navalny will have a more prominent role in Russian politics.
- He is likely to emerge as a favourable figure of the western media.
- Navalny's presence and role is also an indication of serious churn among the Russian elites.
- To note, in Russia, historically, barring once, change usually begins in the upper echelons of power.

8. INTERNATIONAL ORGANISATIONS

8.1 Russia's Exit from Open Skies Treaty

Why in news?

- Russia recently announced that it was leaving the Open Skies Treaty (OST).
- In November 2020, the United States left the OST first after accusing Russia of violating the pact.

What is the Open Skies Treaty?

- The OST is an accord with over 30 countries being part of it.
- It allows participants to fly unarmed reconnaissance flights over any part of their fellow member states.
- It was first proposed in 1955 by former US President Dwight Eisenhower as a means to deescalate tensions during the Cold War.
- The treaty was eventually signed in 1992 between NATO members and former Warsaw Pact countries following the demise of the Soviet Union.
- It went into effect in 2002 and had 35 signatories, including key players US and Russia, along with one non-ratifying member (Kyrgyzstan).

How does it work?

- The OST aims at building confidence among members through mutual openness, thus reducing the chances of accidental war.
- Under the treaty, a member state can "spy" on any part of the host nation, with the latter's consent.
- A country can undertake aerial imaging over the host state after giving notice 72 hours before, and sharing its exact flight path 24 hours before.
- The information gathered, such as on troop movements, military exercises and missile deployments, has to be shared with all member states.
- Only approved imaging equipment is permitted on the surveillance flights.

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- Officials from the host state can also stay on board throughout the planned journey.

Why did the US leave the Treaty?

- The OST was envisaged as a key arms control agreement.
- But many in Washington had for over a decade accused Russia of non-compliance with OST protocols.
- They blamed Moscow of obstructing surveillance flights on its territory, while misusing its own missions for gathering key tactical data.
- Reportedly, the US President Donald Trump was also unhappy that a Russian reconnaissance flew over his golf course in New Jersey State in 2017.
- In May 2020, the Trump administration announced its intention of withdrawing from the OST, and eventually left it in November.

Why did Russia leave after the US?

- A contentious issue regarding Russia's compliance with the OST was its alleged reluctance to allow flights over Kaliningrad.
    - Kaliningrad is its exclave in Eastern Europe that sits between NATO allies Lithuania and Poland.
- Russia defended its position by saying that the restrictions were permissible under treaty rules.
    - It gave the example of the US imposing similar limits on flights over Alaska.
- After the US left the OST, Russia sought assurances from NATO allies who continued to remain on the treaty that they would not transfer data collected by their flights over Russia to Washington.
- Russia said that these requests were not backed by the NATO members, and so it had to leave the treaty.

What is the significance of the Open Skies Treaty?

- The OST was signed much before the advent of advanced satellite imaging technology which is currently the preferred mode for intelligence gathering.
- Yet, surveillance aircraft provide key information that still cannot be gathered by satellite sensors, such as thermal imaging data.
- Notable among them is the OST's utility for Washington, which, since 2002, flew over 200 surveillance missions over Russia and its ally Belarus.
- The OST data gathered during the 2014 Russia-Ukraine conflict was also significant.
- Overall, more than 1,500 flights is said to have been conducted under the OST.

G.S PAPER III

9. ECONOMY

9.1 Forex Reserves Soar

What is the issue?

- India's foreign exchange reserves have risen by over $103 billion as of 25 December 2020 which is set to surpass the all-time-high increase of $110.5 billion recorded in 2007-08 by end of the fiscal.
- Though the reserve positions are comparable, the context between the official reserve accretion then and now is different.

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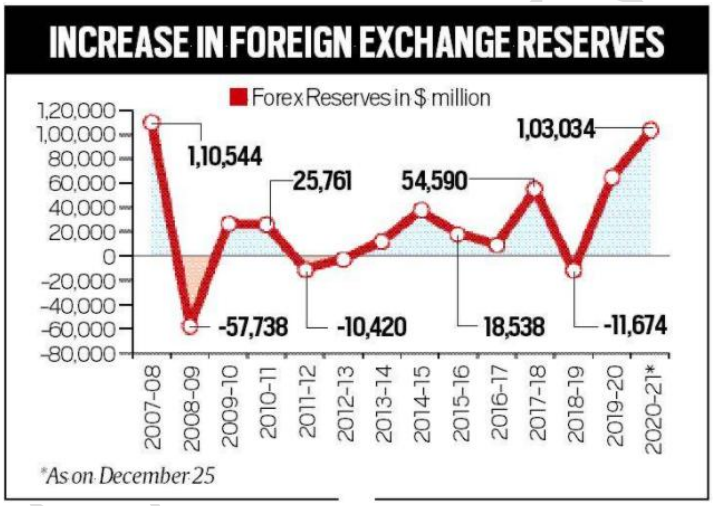
Why is it totally different now from 2007-08?

- In 2007-08, the economy was booming, registering a GDP growth of 9.3% on top of 9.6% and 9.5% in the preceding 2 years.
- The Centre's fiscal deficit, too, was a mere 2.5% of GDP.
- India could, then, easily withstand the shock from the global economic crisis that followed one year later.
- In contrast, the economy has now contracted by 14.9% year-on-year in April-September 2020-21.
- The RBI expects growth for the whole fiscal to be -7.5% (on top of a dismal 3.9% for 2019-20). Nor are government finances in great shape.
- The most optimistic projection of the Centre's fiscal deficit for 2020-21 stands at 6.5%-7% of GDP (as against the budgeted 3.5%).



How about the contributing factors?

- In 2007-08, the $110.5-billion reserve build-up amounted to 7.4% of India's then much-smaller GDP.
- Importantly, it was powered largely by foreign investment, external commercial borrowings and other capital inflows totalling $107.9 billion.
- These inflows were more a result of 'pull' factors, having to do with global investors wanting to partake of the India growth story.
- In contrast, the forex reserve accumulation in 2020-21 has been driven mainly by current account balance (exports-imports gap) turning positive at $34.7 billion during April-September 2020.
- This surplus has, in turn, been due to imports in April-September 2020 falling by a massive $95.6 billion over April-September 2019.
- This is further reflective of low import demand in a shrinking economy.
- The current account surplus has also been supplemented by some foreign capital inflows.
- For instance, Reliance Industries alone attracted global investments aggregating to about $27 billion in its Jio Platforms between April 22 and November 9 in 2020.
- Foreign portfolio investors, too, have pumped $28.65 billion into Indian equity and debt markets so far this fiscal.
- But total foreign capital inflows, net of debt repayments and other outflows, have been only $16.5 billion, as per RBI data for April-September 2020.
- Moreover, unlike in 2007-08, the capital flows coming in now seem to be more courtesy 'push' than 'pull' factors.
- With 10-year US treasury yields currently at 0.91%, investors are being pushed to seek returns in emerging market economies offering relatively higher returns.
- Some of that dollar liquidity has been flowing into India, especially since November.
- In all, it makes for an extraordinary situation of record forex reserves build-up when the economy is experiencing negative growth for the first time in 41 years.

9.2 Sinuous recovery of GST revenues

Why in news?

GST collection in the last month of 2020 was over Rs 1.15-lakh crore which is respite for the fiscally hit government.

Why was this overflow in revenue collections?

- GST inflows have stayed above Rs 1-lakh crore for three months in a row averaging Rs 1.05-lakh crore.

- Since the launch of GST in July 2017, this indirect tax inflow is highest.
- GST on imports grew a robustly 27% in November even though overall merchandise imports contracted by 13.33%.
- After February 2020, for the first time in the December month there was 7.6% surge in imports.
- This indicates that GST on imports will rise further in the coming months.
- Similarly car sales surged for the fifth month in a row in December.
- This will only boost the GST receipts in January but also give revenue from the compensation cess.
- The new GST rules which is effective from January 1 is expected to tighten GST compliance further & revenue inflows will persist.

What are some worrying factors in spite of revenue inflows?

- In November, Core sectors recorded yet another contraction after a minor uptick.
- As per the Centre for Monitoring Indian Economy (CMIE), new investments in the October to December 2020 quarter declined to 88% when compared to a year ago.
- It also highlights the fact that employment levels declined significantly in October.
- It is followed by almost 35 lakh job losses in November & this will continue to deteriorate in December.

What can we infer from this data?

- After two quarters of a sharp shrinkage in the economy due to COVID-19 lockdown, this data indicates that third quarter might see a headline growth.
- Finance Ministry has also said that the 12% year-on-year buoyancy in GST's revenue reflects rapid post-pandemic economic recovery.
- This buoyancy in revenue is supported by efforts like improving the compliance following a recent crackdown on indirect tax evaders.
- However it is important to find out the impact of the above efforts on the revenues.
- This information can give a clear picture on of how much revenue actually came from normal economic activity in November, which is what December revenues largely account for.
- Since November was India's festive season this number was high.
- But these numbers may moderate in the upcoming months even though growth rates may stay high due to a low base effect.

9.3 Quality Gigs, a Solution to Urban Unemployment

What is the issue?

With no urban equivalent to the National Rural Employment Guarantee Scheme (NREGA) as yet, there must be a focus on supporting new forms of employment here.

What is the unemployment scenario?

- The discourse on post lockdown economic recovery has shifted the focus away from the employment question.
- But more recent data from the Centre for Monitoring Indian Economy point to a gradual slowdown in employment recovery from July 2020.
- The latest numbers point to a sharp rise in the national unemployment rate from 6.51% in November to 9.06% in December 2020.

What role has NREGA played?

- With labour force moving back to rural India, employment support came in the form of an increased outlay for the NREGA.
- It witnessed a 243% increase in person workdays.

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- This led to the Rural Development Ministry spending nearly 90% of its increased Rs. 86,400 crore allocation by the month of November 2020.
- However, it is still being unable to fulfil demands for nearly 13% of the 75 million households that demanded work.

What is the condition in urban areas?

- In several Indian cities, businesses are shuttered post the lockdown.
- Millions of workers thus have to either leave or take up new forms of work.
- Some have found the burgeoning **gig economy** to be their only employment source.

What is the status of gig economy?

- In this regard, Fairwork Foundation's annual review of platform labour gains prominence.
- The report evaluates the well-being of gig workers on 11 digital platforms.
- It evaluated them on five metrics of Fair Pay, Fair Conditions, Fair Contracts, Fair Management and Fair Representation.
- In its findings however, only two firms (Urban Company and Flipkart) scored greater than five (out of a maximum of 10) while seven scored only 2 or less.
- Most concerning perhaps, is the fact that the bottom of the rankings are rounded off by India's four largest platform giants, namely, Uber, Ola, Swiggy and Zomato.

What should the government priorities be?

- No urban equivalent to the NREGA is on the horizon.
- So there must be an increased impetus on evaluating, regulating and supporting new forms of employment.
- **Evaluation** - As of now, there exists no authoritative estimate on the total number of gig workers in India.
- Current understanding of gig economy remains constrained to the limited disclosures made by the platforms themselves.
- Furthermore, very few independent studies are evaluating the scale and impact of these platforms.
- So, most regulators continue to remain in the dark on basic questions surrounding platform labour.
- The centralised nature of the platforms and the larger platform labour market only necessitates collating of this data by the Labour Ministry.
- **Regulation** - Some workers use gig economy platforms as a "side hustle."
- For others, it continues to serve as a primary source of employment.
- The varied nature of gig work thus makes regulation highly sensitive.
- This dynamic is further complicated by the risk of a one-size-fits-all regulatory strategy.
- This might unintentionally hurt the similar, yet distinct, market for highly skilled (and highly paid) freelancers.

What is a possible way out?

- A more viable strategy for regulation could involve conditional government **partnerships** with platforms under some of its flagship schemes.
- E.g. the successful pilot of Swiggy's Street Food Vendors programme under the PM SVANidhi scheme
- While onboarding street food vendors onto the platform, Swiggy has also looked to ensure that each vendor is registered and certified by the FSSAI.
- The simultaneous creation of jobs, alongside the voluntary adoption of quality standards is an example of a mutually beneficial partnership.
- Similar collaborations on urban employment with labour platforms complying with disclosure norms and worker compensation standards to access government support would serve the purpose.

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- Current proposals for an Urban Employment Guarantee peg daily worker wages at approximately Rs. 300, at a cost of Rs. 1-lakh crore to the exchequer.
- Collaborating with platforms to employ workers would bring down costs significantly for both the state and their partners.
- More importantly, it would create an environment where firms cooperate with the state, as opposed to adopting an antagonistic position.

13.1 Revamping Production-Linked incentive scheme

What is the issue?

Production-Linked incentive scheme has to be revised to secure digital networks & to have supply chain resilience in electronics sector.

What is production-linked incentive (PLI) scheme?

- It was launched with the aim of increasing India's self-reliance in the manufacturing mobile phones & specific electronic components.
- This was later extended to medical devices, computer hardware, telecom & network products etc.
- It offers incentive of 4-6% on a company's incremental sales for a period of 5 years & India-registered Company can apply if it meets certain criteria on additional annual investment & sales.
- For high-end mobile phones, incremental investment in the 1st year must be Rs 250 crore with incremental sales of Rs 4,000 crore.

What is the core objective of the scheme?

- It aims to attract large investments from global Original equipment manufacturers & make Indian manufacturers globally competitive by creating economies of scale.
- In the mid-2000s, steps were undertaken to attract FDI by signing FTA's with ASEAN and others.
- It also aims to establish GVC engagement for Indian electronics firms by creating backward linkages with the domestic MSME suppliers.

What was the concern about FDI-led integration?

- The Phased Manufacturing Programme of the scheme has led to a significant increase in local assembly & exports of smart phones but import of mobile parts and components has also increased.
- Though the company's revenue from the share of exports was 20% in 2018-19,its import was as high as 85% which is dominated by mobile parts and components.
- Since 2015-16 imports of mobile phone parts & components topped in the total electronics imports.

How was the performance of Global value chain (GVC) integration?

- A recent study of assessing GVC participation of Samsung India established the fact that domestic sub-assemblies did not increase domestic value addition.
- More than 80% of the value of major imports was purchased from the South Korean parent company and Samsung Group's various subsidiaries abroad and in India.
- Even higher value-added service like IT consultancy was also purchased from companies operating in India and abroad.
- In 2018-19, it has spent only 0.05 % of its turnover on local R&D & its net foreign exchange was Rs 431.2 billion.
- It is not just Samsung but other Indian subcontractors also carried out heavily import-dependent operations.

What can we infer from this?

- The objective of creating local manufacturing ecosystem did not succeed & there was a huge foreign exchange leakage.
- The net forex outflow of Samsung alone accounted for about 31 % of India's total electronics exports in 2018-19.

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- FTAs incentivised imports have led to import dependence by the foreign invested and domestic companies.
- Lack of focus on R&D by the private industry has led to low domestic value addition.
- Despite India having strong capabilities in designing integrated circuit (IC), design takes place in MNC R&D centres abroad & getting patent there.
- Hence large share of the value addition from an increase in product sales accrue to the patent owners along the entire value chain leading to forex leakages.

What can be done now?

- The ownership & control of intellectual property of designs & products based on them should go to Indian companies headquartered in India.
- Hence PLI scheme must be revamped to link the incentives directly to a company's investments of 5-6% of annual turnover on R&D.
- Incentives can be tied to the number of patents filed in India based on research in India.
- India must re-visit the role played by our public sector telecom research laboratories- Centre for the Development of Telematics, Centre for Development of Advanced Computing.
- Both the laboratories should validate & acquire indigenously designed & manufactured products with embedded software/new technologies from start-ups and other SMEs.
- This can prevent them from selling their technologies to foreign investors & retain its ownership in India.

9.4 Fallacious Digital lending applications

Why in news?

Unauthorised digital lending apps have increased after Covid-19 induced digital transactions.

How digital lending apps work?

- According to the RBI regulations, entities which undertake lending activity have to get registered with bank or NBFC or State government as a money lender.
- But many digital lending apps have ignored these rules.
- They either disguise their loans as purchase transactions or enter agreements with registered NBFCs or banks to function as 'selling agents'.

What are the issues arising out of this?

- These apps access the borrowers call records, contact books, photo archives while disbursing their 'easy' loans.
- Later they call up borrower's contacts for naming and shaming them & they even harass women contacts.
- Reports also highlight that borrower from these apps driven to suicide, as they get into debt trap with processing charges as high as 20 % & interest rates up to 50%.
- These apps also get involved in extreme recovery practices.
- These practises violate RBI's regulations & its fair practices code, which requires a paper trail & a grievance redress mechanism for every loan disbursed.
- Unauthorised digital lending also creates regulatory arbitrage against licensed banks and NBFCs which comply with the rulebook on ownership, net worth and lending practices.

What actions are taken till now to address this issue?

- Borrowers from these lending apps can file their grievances to the RBI through email or its awareness platform — Sachet.
- In June 2020, RBI said that every digital lender must disclose the name of the bank/NBFC originating the loan.
- But these guidelines are breached to a greater extent.

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What more can be done?

- The RBI needs to do more rather than just warning the public about not falling prey to such illegal entities.
- It should actively shut them down & can involve the law and order machinery, if it requires.
- The regulator should help borrowers task of verifying the credentials of banks or NBFCs that back lending apps.
- RBI website reveals 12 different categories of NBFCs, with over 9,200 firms are listed under 'Investment and Credit' entities alone.
- Borrowers will find it difficult to identify illegal entities in this large list.
- Hence a separate registration for digital lending apps has to be created similar to the one available for P2P platforms.
- The Centre & the RBI must also exert pressure on Google and Apple to actively monitor user reviews on lending apps and to take them down if they're found to be violating the law.

9.5 GDP Projections

Why in news?

Recently, NSO projected that GDP of the current fiscal will be around Rs 134.4-lakh crore in constant prices rebounding after pandemic-induced slump of the preceding two quarters.

What does this data indicate?

- After contracting by almost 16% in the April-September period, GDP is just short of Rs 10,400 crore when compared to the second half of the earlier figure.
- NSO has assumed that output will recover vigorously in the third and fourth quarters & it is highly optimistic about the expenditure side and gross value added of various industries.
- NSO expects manufacturing sector to shrink 9.4% this fiscal & the GVA of services components-trade, hotels, transport- to contract over 21.4% over the 12-month period.
- COVID-19 mandated social distancing norms has severely affected services sector which contributes almost a fifth to overall GVA.
- Private consumption expenditure — the single biggest component propelling GDP— is estimated to shrink 9.5% in the full year after contracting nearly 19% in the first half.
- This reflects the fact that consumers had shed their suspicion in spending in the face of COVID-19.
- They will now begin to consume goods and services close to pre-pandemic levels & this will reduce the instances of job losses.

Is this data overestimated?

- The NSO projects that government final consumption expenditure (GFCE) will jump to 17% in the second half after first-half's contraction & boost to a growth of 5.8%.
- But the end-November fiscal deficit data shows that the government is lagging well behind its budgeted revenue & capital expenditure targets.
- Hence it is hard to project how GFCE can increase so appreciably in the second half.
- So these estimates are likely to undergo revisions & upcoming Economic Survey could move away from these overly optimistic assumptions with more clear assessment of the economy.

9.6 Need for a Bad Bank

Why in news?

As the problem of non-performing assets (NPAs) persists stressed by the pandemic, the RBI Governor has agreed to look at a proposal for creating a bad bank.

What is a bad bank and how does it work?

- A bad bank conveys the impression that it will function as a bank but has bad assets to start with.

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    - Currently, loans in which the borrower fails to pay principal and/or interest charges within 90 days are classified as NPAs and provisioning is made accordingly.
- Technically, a bad bank is an asset reconstruction company (ARC) or an asset management company.
    - It takes over the bad loans of commercial banks, manages them and finally recovers the money over a period of time.
- The bad bank is not involved in lending and taking deposits.
- It just helps commercial banks clean up their balance sheets and resolve bad loans.
- The takeover of bad loans is normally below the book value of the loan and the bad bank tries to recover as much as possible subsequently.
- US-based Mellon Bank created the first bad bank in 1988.
- After this, the concept has been implemented in other countries including Sweden, Finland, France and Germany.
- However, resolution agencies or ARCs set up as banks, which originate or guarantee lending, have ended up turning into reckless lenders in some countries.

How serious is the NPA issue in the wake of the pandemic?

- Bad loans are expected to multiply in the wake of contraction in the economy and the problems being faced by many sectors.
- The RBI noted in its recent Financial Stability Report that the gross NPAs of the banking sector are expected to shoot up to 13.5% of advances by September 2021, from 7.5% in September 2020.
- If the macroeconomic environment worsens into a severe stress scenario, the ratio may escalate to 14.8%.
- Among bank groups, the NPA ratio of PSU banks, which was 9.7% in September 2020, may increase to 16.2% by September 2021 under the baseline scenario.
- Corporate sector debt worth Rs 15.52 lakh crore has come under stress after Covid-19 hit India.
- Another Rs 22.20 lakh crore was already under stress before the pandemic.
- This effectively means Rs 37.72 crore (72% of the banking sector debt to industry) remains under stress.
- This is almost 37% of the total non-food bank credit.

What is the need for a bad bank?

- The RBI has taken a series of measures for better recognition and provisioning against NPAs.
- There have also been massive doses of capitalisation of public sector banks by the government.
- Despite these, the problem of NPAs continues in the banking sector, especially among the weaker banks.
- The idea of a bad bank gained currency during Former RBI Governor Raghuram Rajan's tenure.
    - The RBI had then initiated an asset quality review (AQR) of banks.
    - It found that several banks had suppressed or hidden bad loans to show a healthy balance sheet.
- However, the idea remained on paper amid lack of consensus on the efficacy of such an institution.
- ARCs have not made any impact in resolving bad loans due to many procedural issues.
- Now, with the pandemic hitting the banking sector, the RBI fears a spike in bad loans in the wake of a six-month moratorium announced to tackle the economic slowdown.

How will it help?

- A professionally-run bad bank, funded by the private lenders and supported the government, can be an effective mechanism to deal with NPAs.
- The bad bank concept is in some ways similar to an ARC but is funded by the government initially, with banks and other investors co-investing in due course.
- The presence of the government is seen as a means to speed up the clean-up process.

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- Many other countries had set up institutional mechanisms such as the Troubled Asset Relief Programme (TARP) in the US to deal with the problem of stress in the financial system.

What are the concerns?

- Former RBI Governor Raghuram Rajan had opposed the idea of setting up a bad bank in which banks hold a majority stake.
- Bad bank idea is like shifting loans from one government pocket (the public sector banks) to another (the bad bank).
- Indeed, if the bad bank were in the public sector, the reluctance to act would merely be shifted to the bad bank.

What are the suggestions in this regard?

- Viral Acharya, when he was the RBI Deputy Governor, had suggested the following.
- It would be better to limit the objective of the asset management companies to the orderly resolution of stressed assets, followed by a graceful exit.
- Acharya suggested two models to solve the problem of stressed assets.
- The first is a private asset management company (PAMC).
- PAMC is said to be suitable for stressed sectors where the assets are likely to have an economic value in the short run, with moderate levels of debt forgiveness.
- The second model is the National Asset Management Company (NAMC).
- An NAMC would be necessary for sectors where the problem is not just one of excess capacity but possibly also of economically unviable assets in the short to medium terms.

9.7 SC upholds IBC's Section 32A

Why in news?

In its judgment, the Supreme Court (SC) upheld the validity of Section 32 A of Insolvency and Bankruptcy Code (IBC).

What did the judgment specify?

- Section 32A of the IBC offers protection to successful bidders and the assets of a corporate debtor.
- The court said that the successful bidders for a corporate debtor under the IBC would be immune from any investigations being conducted.
    - This applies to investigations either by any investigating agencies such as the Enforcement Directorate (ED) or other statutory bodies such as the SEBI.
- SC also said it was important for the IBC to attract bidders who would offer reasonable and fair value for the corporate debtor.
- This is to ensure the timely completion of corporate insolvency resolution process (CIRP).
- Such bidders, however, must also be granted protection from any misdeeds of the past since they had nothing to do with it.
- Such protection must also extend to the assets of a corporate debtor.
- The court has, however, said that the immunity would be applicable only if there is an approved resolution plan, and a change in the management control of the corporate debtor.
- The new management cannot be the disguised version of the old management. It cannot even be the related party of the corporate debtor.

How does this help?

- The protection forms a crucial attraction for potential bidders.
- It helps them in assessing and placing a fair bid for the company.
- This, in turn, will help banks clean up their books of bad loans.

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- The extinguishment of the criminal liability of the corporate debtor is apparently important to the new management.
- This will help make a clean break with the past and start on a clean slate.

Why is the SC upholding Section 32A important?

- Since the IBC came into being in 2016, the implementation of resolution plan of several big ticket cases has been delayed.
- This was because of various challenges mounted by its own agencies and regulators.
- With the Supreme Court upholding the validity of Section 32 A, the cases delayed are expected to be completed soon.
- This is also expected to give confidence to other bidders to proceed with confidence while bidding on such disputed companies and their assets.

9.8 Flexible Inflation Targeting

What is the issue?

- The 4% and +/- 2% target cycle for inflation under the Flexible Inflation Targeting (FIT) approach comes to an end this fiscal (March 31, 2021).
- With the government tasked to notify the revised numbers, here is a look at how the target so far has worked.

What is FIT?

- The Flexible Inflation Targeting (FIT) approach has served the RBI's monetary policy for the last four years.
- Inflation was the primary, clear target of this approach.
- The FIT worked with a band that specified a target for inflation at an average of 4%.
- It was however open to swinging up or down by two percentage points.

How does it work?

- The adoption of FIT through a legislative mandate on September 29, 2016 was a landmark decision.
- It worked as a milestone in the monetary and fiscal interface.
- India since then followed a contractual approach of inflation targeting.
- Under this, the government decides and notifies the target.
- It gives the RBI the operational independence to operate its policy instruments to deliver on the agreed target.

How has FIT performed?

- Since the inception of FIT in 2016, GDP growth starting 2016-17 and ending 2019-20 stood at 8.26, 7.04, 6.12 and 4.18 (all in Y-o-Y and in percentage terms).
- In the same period, the average inflation rate was at 4.5, 3.6, 3.4 and 4.8 (in percentage terms).
- So in the first four years, the mandate has been met.
- To that extent, it can be said that the monetary policy has been effective.

What is the recent inflation scenario?

- The COVID-19 pandemic has put severe pressure on the monetary policy objective.
- There was an unprecedented contraction in the growth rate of 23.9% in Q1 and 7.5% in Q2 of 2020-21, and an estimated contraction of 7.7% for fiscal 2020-21.
- Worryingly, the headline inflation rate remained above the upper band of 6% for eight consecutive months during the period April–Nov 2020.
- However, the December 2020 CPI inflation is at 4.59% on Y-o-Y basis.
- This was mainly on account of deceleration in food inflation by 3.87%.

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- The Monetary Policy Committee (MPC) in its December 2020 resolution had stated that the inflation rate will come down to 5.8% in Q4 of 2020-21, with risks broadly balanced.
- Thus, the RBI is hopeful of returning to the target as soon as the supply side bottlenecks ease.

Why should FIT continue?

- FIT has worked reasonably well with the average of 4% and a band of +/- 2%.
- A reasonable band of 2% on the lower side and 6% on the upper side gives the RBI manoeuvrability for inflation management.
    - This is especially given the fact that India has many uncontrollable variables, most notably monsoons.
    - Besides food inflation, fuel inflation is also dependent upon the volatility of crude oil prices.
- Also, 4% headline inflation with an upper ceiling of 6% keeps the core inflation (headline inflation minus food and fuel inflation) at an appropriate level.
    - This is because there is a co-movement of core inflation with the headline inflation and vice versa.
- Any increase in the band above 6% will put pressure on the RBI in anchoring inflation expectations.
- On the lower side of the band, any inflation rate lower than 2% has the potential risk of the economy entering in a deflationary situation.
- Prior to the adoption of FIT, the RBI did not have the exposure in terms of responding to the CPI inflation.
- Earlier, WPI was taken as inflation measurement. However, CPI gives a weightage of around 46% to food inflation on which the RBI has no control.
- Over the four-year period since FIT adoption, the RBI's CPI inflation forecasting has been reasonably successful.
- RBI has also been effective in anchoring inflation expectation in a three-month and one-year ahead time frame.

9.9 RBI's Regulatory Framework for NBFCs

Why in news?

The RBI has proposed a tighter regulatory framework for non-banking financial companies (NBFCs), in its discussion paper on revised regulatory framework for NBFCs.

What are the key provisions?

- **Classification** - The RBI has said the regulatory and supervisory framework of NBFCs should be based on a four-layered structure:
    i. NBFCs in lower layer will be known as NBFC-Base Layer (NBFC-BL).
    ii. NBFCs in middle layer will be known as NBFC-Middle Layer (NBFC-ML).
    iii. NBFCs in the Upper Layer will be known as NBFC-Upper Layer (NBFC-UL).
    iv. There is also a Top Layer, ideally supposed to be empty.
- Each of these will invite a new regulatory superstructure.
- **Regulation** - Once an NBFC is identified as NBFC-UL, it will be subject to enhanced regulatory requirement.
- This will apply at least for four years from its last appearance in the category, even where it does not meet the parametric criteria in the subsequent year.
- In other words, if an identified NBFC-UL does not meet the criteria for classification for 4 consecutive years, it will move out of the enhanced regulatory framework.

How does the classification work?

- **Base Layer** - If the framework is visualised as a pyramid, the bottom of the pyramid will be the base layer.
- This is where least regulatory intervention is warranted.

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- It can consist of NBFCs, currently classified as non-systemically important NBFCs (NBFC-ND), NBFCP2P lending platforms, NBFCAA, NOFHC and Type I NBFCs.
- **Middle Layer** - Going up, the next layer can consist of NBFCs currently classified as –
    - systemically important NBFCs (NBFC-ND-SI), deposit taking NBFCs (NBFC-D), housing finance companies, IFCs, IDFs, SPDs and core investment companies
- The regulatory regime for this layer will be stricter compared to the base layer.
- Adverse regulatory arbitrage vis-à-vis banks can be addressed for NBFCs falling in this layer in order to reduce systemic risk spill-overs, where required.
- **Upper Layer** -Going further, the next layer can consist of NBFCs which are identified as systemically significant.
- This layer will be populated by NBFCs which have large potential of systemic spill-over of risks and have the ability to impact financial stability.
- There is no parallel for this layer at present, as this will be a new layer for regulation.
- The regulatory framework for NBFCs falling in this layer will be bank-like, but with suitable and appropriate modifications.
- **Top Layer** - If certain NBFCs in the upper layer are seen to pose extreme risks as per supervisory judgement, they can be put to higher and customized regulatory/supervisory requirements.
- These NBFCs will occupy the top of the upper layer as a distinct set.
- Ideally, this top layer of the pyramid will remain empty unless supervisors take a view on specific NBFCs.

What is the rationale?

- The NBFC sector has seen tremendous growth in recent years.
- The size of NBFC balance sheets is now more than a quarter of that of banks' balance sheets, from just about 12% in 2010.
- In absolute terms, their balance sheets have more than doubled, from Rs 20.72 lakh crore in 2015 to Rs 49.22 lakh crore in 2020.
- This growth is a reflection of how lighter regulations have given them the flexibility to meet a range of financing needs.
    - It offered for needs ranging from home loans to micro-finance and large infrastructure projects.
- However, this also manifested into a systemic risk.
- The risk was apparent when one of the largest infrastructure investment-focused NBFC players, IL&FS, unravelled in 2018.
    - Its payment defaults catalysed a crisis for the entire sector.
    - The collateral damage meant NBFCs could not raise funds easily.
    - NBFCs faced liquidity pressures that escalated to solvency concerns in some instances.
- In view of the recent stress in the sector, it has become imperative to re-examine the suitability of the regulatory approach.
- The regulatory framework for NBFCs thus needs to be reoriented to keep pace with changing realities in the financial sector.
- If implemented, the present changes could be the biggest overhaul of the regulatory framework for NBFCs in over two decade.

9.10 Increase in outstanding P-notes

Why in news?

P-notes (Participatory notes) hit a 31-month high in November 2020, with the value of outstanding P-notes reaching Rs. 83,114 crore.

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What are P-notes?

- Foreign portfolio investment (FPI) is a common way to invest in overseas economies.
- It includes securities and financial assets held by investors in another country.
- P-notes are issued by foreign portfolio investors (FPIs) registered with SEBI to overseas investors who are not registered as FPIs in India.
- In this, the final owner can be concealed from regulators.
- This anonymity provided by P-notes had led to entities using this route to round-trip funds.

What are the recent developments?

- P-notes have gained notoriety on account of their rampant misuse prior to 2008.
- The value of outstanding P-notes had exceeded 50% of FPI assets in late 2007.
- This led to SEBI clamping down on the issuances of, and disclosure and trading in, these instruments.
- Outstanding P-notes have reduced sharply since then.

Is increase in outstanding P-notes a problem?

- There is no real cause for alarm in the value of outstanding P-notes increasing.
- These instruments account for only 2% of FPI assets currently.
- The increase in value of outstanding P-notes can be explained by two factors:
    1. the rally in stock prices has resulted in inflating the value of existing P-note holdings
    2. there has been a great surge in FPI inflows this fiscal, with investments so far exceeding Rs. 2,42,000 crore
- So, increase in outstanding P-notes implies higher overseas demand for Indian stocks.
- Despite the impact of the pandemic on the economy, foreign investors have preferred Indian equities.
- This is due to the country's demographic advantage and its consumption-led growth.
- Foreign investors already registered with SEBI can easily increase their investments into the Indian market at such times.
- But, those yet to obtain registration may prefer the P-note route for its speed and lower compliance requirements.
- It further needs to be noted that there are no P-notes issued on derivatives outstanding now.
    - Derivatives are securities that derive their value from an underlying asset or benchmark.
    - P-notes on derivatives are the riskiest.
    - This is because they are used by hedge funds and large traders in the international market who tend to move in and out of stocks very rapidly.
    - This may cause great volatility in stock prices.
- Since no P-notes issued on derivatives outstanding now, SEBI need not worry about scrutinising the P-note inflows or tightening the rules governing these instruments.
- However, this cannot be said about rules governing FPIs.

9.11 Widening Inequality

Why in news?

As per recent Oxfam report, Indian billionaires wealth increased by 35% during the lockdown.

What does the report say?

- Inequality was alarmingly high and it destabilises social and political order in the world even before the pandemic & economists say it is set to further aggravate.

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- It says that 1,000 richest people worldwide recovered their losses from the pandemic within nine months.
- But worlds poorest might take a decade to limp back to their pre-pandemic standing.
- The additional wealth acquired by India's 100 billionaires since March when the lockdown was imposed is enough to give every one of the 138 million poorest a cheque of Rs 94,045 each.
- The increase in wealth alone could keep 40 crore informal workers out of poverty for at least five months.

What are the other details in the report?

- The economic recovery is uneven among countries and within countries & economic inequality is rising sharply in all countries.
- An unskilled worker in India would take three years to earn what the country's richest person earned in one second last year.
- The worsening inequality in income and opportunities impacts some sections disproportionately due to discrimination based on gender, caste and people worstly affected by the disease.
- It also says that wealth of just the top 11 billionaires during the pandemic could easily sustain the MGNREGS or the Health Ministry for the next 10 years.

What are the various forms of inequity highlighted by the report?

- Economists agree that distribution of new wealth between capital and labour has become so one-sided that workers are constantly being pushed to deprivation while the rich are getting richer.
- **Health:** only 6% of the poorest & 20% have access to non-shared sources of improved sanitation compared to 93.4 % of top 20 %.
- 59.6 % of India's population lived in a room or less, which means that protocols to prevent the spread of COVID-19 is not followed.
- Though government took steps to make COVID-19 services affordable by including them under Ayushman Bharat-PMJAY, it covered BPL leaving out the uninsured poor and the middle class.
- **Education:** Till October, 32 crores students were hit by closure of schools, of whom 84 % resided in rural areas and 70 %attended government schools.
- It says that across five States close to 40 % of teachers in government schools feared that the prolonged school closure might lead to a third of the students not returning once schools reopened.
- Dalits, Adivasis and Muslims were likely to see a higher rate of dropout & Girls are most vulnerable as they were at risk of early and forced marriage, violence and early pregnancies.
- **Gender:** Unemployment of women rose by 15% from a pre-lockdown level of 18 %, which could result in a loss of India's GDP of about 8 % or Rs 15 trillion.
- Women who were employed before the lockdown were also 23.5 % points less likely to be re-employed compared to men in the post lockdown phase.

How to address this?

- Inequality came to be seen as a outcome of economic growth & politicians and policy makers accept that rising inequality is inevitable.
- According to its estimate, wealth tax on the nation's 954 richest families could raise the equivalent of 1% of the GDP.
- It recommended reintroducing the wealth tax and imposing a one-time COVID-19 cess of 4% on taxable income of over Rs 10 lakh will help in economic recovery from the lockdown.

9.12 Uncertainty in stock market indices

Why in news?

- With the Union Budget just five days away, Sensex fall by 938 points & NSE Nifty Index by 271 points.
- With this, the Sensex has fallen 2,600 points after it hit the 50,000 mark last week.

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What has led to this selling pressure?

- After a weak start, the benchmark indices gradually drifted lower as the day progressed and settled around the day's low.
- Several factors- negative foreign flows, uncertainty about US stimulus, US FOMC (Federal Open Market Committee) meeting & less encouraging earnings announcements affected the market.
- Besides this caution ahead of the Union Budget and scheduled derivatives expiry also added to this dip.
- All the other indices, barring FMCG, ended in loss with metal,auto remaining the top losers.

Are foreign investors selling stocks?

- Foreign portfolio investors (FPIs) who invested Rs 1.70 lakh crore in 2020 have turned cautious & it is well-known that fall in FPIs inflows is the biggest risk to the liquidity-driven rally.
- Indian stock market mirrored a mixed sentiment from global peers & downward rally is owed to the consecutive days of FPI selling.
- Barring the defensive FMCG segment, all sectors traded in the red zone with banking and pharma stocks being the worst hit.

How are other markets performing?

- The global markets had mixed values ahead of the US Fed meeting & amid uncertainty over the US stimulus.
- In the Asian session, shares fell due to some profit-taking as investors grew wary of stretched valuations.
- Europe's share indexes opened lower, while investors focused on the US Federal Reserve meeting and US tech giants' earnings.
- Besides, worries over the Covid pandemic and economic recovery have made investors cautious.

What are the issues ahead for the markets?

- The markets are eagerly awaiting the Union Budget scheduled on February 1 & are worried about the impact of Covid on fiscal deficit and the borrowing programme.
- Besides, there are worries over new tax proposals of the government which is seeking new revenue sources.
- FPIs are expected to take a view after considering the US stimulus programme which is yet to be formalised.
- Global investors are also awaiting the statement of the US FOMC about the economy and interest rates.
- A major reason for the global stock rally all these months was a liquidity surge in most countries including India.
- The RBI in its bi-monthly monetary policy is expected to give an indication about the policy stance and the way forward on the unwinding of the accommodative policies.

Will the FOMC meeting impact markets?

- The US Federal Reserve is expected to be more cautious about the near-term outlook, while more optimistic over the longer-term.
- Investors mainly focus on the message that the central bank provides.
- It is expected that central bank will reiterate its accommodative stand & tapering of asset purchases will not be the policy agenda even if new fiscal program are introduced.
- The upcoming FOMC meeting is most likely to leave the policy rate unchanged at 0-0.25% & expected to reinforce accommodative stand as US economy continues to battle the pandemic.
- Over the last week, many major central banks -ECB, BoJ, BoC- continue to provide assurances that monetary policy will remain accommodative for a considerable period of time.

9.13 Decoding Cuba's Currency Reforms

Why in news?

Cuba unified the Cuban peso (CUP) and the Cuban convertible peso (CUC) as one currency, and put an end to the decades-old dual currency system effective January 1, 2021.

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How does Cuba's monetary system work?

- For nearly three decades, two currencies have circulated in Cuba - the peso (CUP) and the convertible peso (CUC).
- Both were officially valued at one-to-one with the dollar.
- Neither currency is tradable outside the country.
- The currencies are exchanged at various rates:
    i. one-to-one for state-owned businesses
    ii. 24 pesos for 1 CUC for the public and others for joint ventures, wages in the island's special development zone and transactions between farmers and hotels
- Cuba created the system as part of a package of measures to open up its economy after the collapse of the Soviet Union.
- While the system helped Cuba get through the shock of the Soviet collapse, it also ended up hiding the real economic situation.

What is the change made now?

- Cuba went with devaluation of the Cuban peso (CUP) and the withdrawal of the convertible peso (CUC). The CUC will be eliminated.
    - The CUP is in circulation in the domestic economy and serves as the principal medium by which goods are priced and wages paid.
- President Miguel Diaz-Canel said the devaluation would leave the peso at a single fixed rate of 24 to the dollar.
- The government has also begun opening stores that sell consumer goods for dollars and other traded currencies, though only with a bank card.
- This is a temporary measure but the partial dollarization will also provide some stability, especially for families who receive remittances.
- Meanwhile, state and private companies can now keep tradable currency accounts with up to 80% of their export earnings instead of handing them over to the state.

How did dual domestic currency come about?

- During the turmoil in Cuba's sugar industry and a plunge in nickel prices in the 1990s, a volatile CUP had fallen to 140 to the dollar.
- Against this backdrop, the CUC was introduced in 1994 as a unit of account and store of value.
- The objective was to prevent the country's excessive reliance on the U.S. dollar following the end of the former Soviet Union.

What is the rationale for the reforms now?

- The reforms aim to eliminate price distortions arising from multiple exchange rates and reduce Cuba's dependence on imports of basic commodities.
- These conditions have been exacerbated by -
    i. the fallout from the COVID-19 pandemic
    ii. decline in the export of the nation's famed medical services
    iii. the depletion of foreign exchange revenues from tourism
    iv. the crippling impact of U.S. economic sanctions
- In recent years, the second currency [CUC] has more or less steadied at one CUC to 24 CUPs in official exchange outlets.
- It is the predominant mode of transaction for tourists and residents at high-end shopping outlets and other imported goods.
- There are disparities attributed to the prevalence of a dual domestic currency.
- The recent shift is part of the government's bid to boost dollar transactions alongside other hard currencies.

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- It came especially after tourism was closed in the wake of the pandemic.

What is the significance?

- Cuba's switch back to a single currency was an important objective in the economic transformation plan envisioned in the 2011 Congress of the Communist Party of Cuba under former President Raul Castro.
- Among the expected gains from a unified peso are -
    - transparency of firms in terms of costs and profits
    - higher economic productivity and incentives for exports
- Experts have opined that a corresponding devaluation of the peso was a necessary first step to discontinue the dual currency.
    - The government has sought to balance the likely impact of high inflation resulting from the devaluation with a generous wage and pension hike for state employees.
    - A roll-back of subsidies to state-owned firms is also proposed.

9.14 Multilateralism at Davos

Why in news?

Recently Chinese President attended the Davos summit virtually, a gathering seen as synonymous with global capitalism.

What did he spoke in the summit?

- His speech carried many of similar themes which he spoke in the 2017 summit.
- He called for global unity, closer coordination on macroeconomic policy and more equitable growth & carried two messages that appeared to be aimed at Washington.
- He reflected on the four turbulent years of a tariff and technology war between the world's two biggest economies.
- He said that each country is unique with its own history, culture and social system & none is superior to the other and difference in itself should not cause alarm.
- He reflected that arrogance, prejudice and hatred are seen as an attempt to impose hierarchy on human civilisation.
- He also hit out at attempts to build small circles or start a new Cold War, to reject, threaten or intimidate others.
- He commented that misguided approach of antagonism and confrontation, be it in the form of cold war, hot war, trade war or tech war, would eventually hurt all countries' interests.

Does China stood by his statements?

- Earlier President said the country is committed to international law and international rules instead of seeking its own supremacy.
- Indeed, only the day before the speech, military commanders from India and China spent over 16 hours in talks on border issues.
- The latest round of talks was unsuccessful attempt to disengage the two forces after China's unprecedented military mobilisation across the LAC starting in May.
- It is not only India that is dealing with a harder Chinese military posture in the midst of a global pandemic.
- On January 23, eight bombers and four fighters from China entered Taiwan's air defence identification zone, the latest warning to Taipei.
- Mr. Xi also said that decisions should not be made by simply showing off strong military might which is relevant to all the big, militarised powers & China is one among them.

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10. INFRASTRUCTURE

10.1 Zero Termination Rate

Why in news?

The telecom industry moves to a new regime from 1 January 2021 with the interconnect usage charge (IUC) becoming zero.

What does this mean?

- A termination charge was paid to the operator on whose network the call terminated by the originating network.
- The new regime, where zero termination rate is payable, is known as bill and keep.
- With this, the operators will no longer have to pay the termination charge of 6 paise per minute to each other.

What impact will this have?

- The development would be revenue-neutral for all operators.
- This is because largely there is a symmetry by now between incoming calls to their networks and the outgoing to other networks.
- Till about a year ago, there was a symmetry between incoming and outgoing calls between the networks of Bharti Airtel and Vodafone Idea.
- However, in case of Jio, the number of outgoing calls was larger than incoming.
- Therefore, it was a net payer of IUC rather than net receiver.
- Reliance Jio was thus the only operator which charged its customers for termination of off-net calls (calls made to another network like Bharti Airtel or Vodafone Idea).
- While levying a termination charge for off-net calls in October 2019, Jio had said it would abolish it the day IUC becomes zero.
- With the new regime, Reliance Jio said it would no longer levy this charge.

What lies ahead for the telcos?

- The measure was delayed by a year by the regulator [TRAI] due to concerns that not all operators were ready.
- Also, the shift to more efficient 4G networks and compatible subscriber handsets was slower than anticipated.
- But now, the need to monitor call termination data and to make IUC payments no longer exists.
- Also, a spectrum auction is scheduled in 2021.
- Given these, the telecom companies can now focus on upgrading their networks and service.
- The focus should shift to giving the users a better deal such as reliable call quality and competitive tariffs.

How about the overall network status?

- India's high density telecom market is poised for further growth as it awaits expansion through 5G and Internet-connected devices.
- Yet, as the Economic Survey of 2019-20 pointed out, intense competition has reduced the number of private players.
- Public sector operators BSNL and MTNL still face a challenge.
- So, their future must be clarified early, with efforts to improve their technological capabilities and service levels.
- A parallel trend has been the rise in 4G subscribers [from 196.9 million in September 2017 to 517.5 million (out of a total wireless subscriber base of 1,165.46 million) in June 2019].
- The end of the IUC should encourage an expansion of high-capacity networks, going beyond 2G and 3G that some telcos continue to use.

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What is the way forward?

- TRAI has always stressed the importance of consumer welfare through adequate choice, affordable tariff and quality service.
- So, it is now important to tread cautiously on claims made on behalf of the companies, that higher tariffs alone can ensure the health of telecoms.
- India is a mass market for voice and data services that fuel the digital economy.
- Badly priced spectrum could lead to auction failures. On the other hand, lack of genuine competition is bound to hamper the growth of the next big wave of telecoms. These should be addressed.
- On the consumer side, helping more people migrate to 4G services quickly through affordable handsets will help telcos put their infrastructure to better use.

10.2 Shipping Sector needs to be given due focus

What is the issue?

Despite India having significant coastline, it failed to realise the potential of shipping sector.

What is the concern regarding shipping sector?

- India once being a maritime supreme nation, now lost its global eminence in shipping due to poor legislation and politics.
- Whereas China which has coast only in east, is prominent in shipping due to its strong merchant marine and infrastructure to carry and handle merchandise all over the world.
- For instance, control of the seas is key component of China's Belt and Road Initiative & it is trying to take control of Bay of Bengal and Indian Ocean Region.
- The shipping infrastructure in peninsular India only helps foreign shipping liners.

How it helps foreign shipping liners?

- Colonial traders developed shore-based infrastructure to cater to the carrying capacity & there was balanced infrastructure onshore and at sea- road and rail connectivity -to facilitate their trade.
- Today foreign ship owners & agents carry inbound and outbound cargo and continue to exploit EXIM trade with enormous hidden charges in the logistics cycle.
- This is because India still did not optimise its carrying capacity so much of foreign currency is drained as transhipment and handling cost every day.
- Also members of our maritime business community prefer to be agents for foreign ship owners or container liners rather than becoming ship owners or container liners themselves.
- As a result, there is a wide gap between carrying capacity and multi-folded cargo growth in the country.
- Moreover relaxing "Cabotage" regulation will benefit only foreign container-carrying companies and not Indian ship owners.

What is the issue in shipping infrastructure?

- Indian bureaucracy has repeatedly allowed similar infrastructural developments in multiple cargo-handling ports rather than creating regional cargo-specific ports.
- As a result, Indian ports compete for the same cargo.
- If major ports are made cargo-specific with state of art infrastructure -connecting to hinterlands & international sea routes-, they will become transhipment hubs.
- Hence focus should on developing ports to serve the regional transhipment hubs for which small ship coastal operations needs to be improved.

How will Sagarmala programme will benefit shipping industry?

- It aims to enhance the performance of the country's logistics sector through port-led industrialisation, development of world-class logistics institutions and coastal community development.
- This will get reflected in domestic carrying capacity.

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- Involving coastal communities will help in harnessing their century-old ship-owning spirit and sailing skills.
- Coastal communities will now be made as ship owners which will initiate carriage of cargo by shallow drafted small ships through coast and inland waterways.

What more can be done?

- With the call for 'Make in India' growing louder and simultaneous multi-folded cargo growth in the country, ships must to cater to domestic and international trade.
- Shipbuilding & Ship-owning spirit of the Indian merchant marine entrepreneur has to be restored & encouraged by the Ministry.
- The National Shipping Board an independent advisory body for the Ministry of Shipping needs to question the functioning of the Directorate General of Shipping (DGS).
- This DGS is responsible for promoting the carrying capacity in the country.
- In the coastal region, Sagarmala should concentrate on consolidating the strength youth population making them contribute to the nation's economy with pride.
- To make existing major ports as transhipment hubs, we need to develop balanced infrastructure in onshore & at sea.

11. AGRICULTURE

11.1 Ignoring Women Farmers

What is the issue?

- According to the agricultural census, 73.2% of rural women are engaged in farming activities but only 12.8% own landholdings.
- The gender gap in the agriculture sector will only widen more with the current farm laws.

What are the concerns for women in agriculture?

- In India, agriculture is mostly related as a filed for men who are alone seen as farmers. However, this is far from the truth.
- As mentioned, 73.2% of rural women are engaged in farming activities but only 12.8% own landholdings.
- Due to cultural, social and religious forces, women have been denied ownership of land.
- Notably, 83% of agricultural land in the country is inherited by male members of the family and less than 2% by their female counterparts.
- Thus, women are mostly left without any title of land in their names and are excluded from the definition of farmers.
- The government only labels them as 'cultivators' or 'agricultural labourers' but not 'farmers'.

What impact does this create?

- Without any recognition, women are systematically excluded from all the benefits of government schemes.
- Moreover, they are not guaranteed the rights which they would otherwise be given if they were recognised as farmers.
- These include loans for cultivation, loan waivers, crop insurance, subsidies or even compensation to their families in cases where they commit suicide.

What are the other problems?

- Non-recognition as farmers is only one of their problems.
- Women have unequal access to rights over land, water and forests.
- There is gendered access to support systems such as storage facilities, transportation costs, and cash for new investments or for paying off old dues and such services related to agricultural credit.

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- There is also gendered access to inputs and markets.
- Thus, despite their large contribution to the sector, women farmers have been reduced to a marginal section, vulnerable to exploitation.

How do the recent farm laws affect them?

- The policies fall short of reducing disparity or alleviating their distress.
- Given this, women farmers fear that the farm laws will further deepen gender inequality in the sector.
- In this context, the first concern is the lack of any mention of MSP (minimum support price) that protects farmers from exploitation.
- Also, farmers will have no bargaining power in the corporatisation of agriculture.
- Corporates get to decide the price, with less safety net or adequate redressal mechanism for the farmers.
- Consequently, the small, marginal and medium farmers will be forced to sell their land to big agro-businesses and become wage labourers.
- In this, women are barely in a position as empowered agents who can either understand or negotiate (written) agreements with traders and corporate entities.
- Perhaps, this is why women are notable part of the ongoing farmers struggle to remind that they are farmers too and have an equal stake in this fight.

11.2 Role of agriculture - Economic Slump

What is the issue?

- The National Statistical Office's first advance estimates released recently show a 7.2% fall in gross value added (GVA) for 2020-21.
- While this would be the sharpest fall ever recorded in India, a more significant aspect is to do with the driving factor (economic sector).

What do earlier economic slumps show?

- There have been four earlier occasions when the country's GVA has suffered contraction.
    - GVA is GDP net of all taxes and subsidies on products. It is thus a more accurate measure of economic activity.
- The extent of negative growth in those four years was lower than the 7.2% being projected for the current fiscal.
    - 1979-80 (minus 5.2%), 1972-73 (minus 0.3%), 1965-66 (minus 3.7%) and 1957-58 (minus 1.2%)
- In each of those four previous years, the primary cause was agriculture.
- All four were drought years and the farm sector (agriculture, forestry and fishing) registered minus growth.
    - minus 12.8% in 1979-80, minus 5% in 1972-73, minus 11% in 1965-66 and minus 4.5% in 1957-58

What is different this time?

- The low growth in agriculture in the previous years, in turn affected the rest of the economy.
- However, this is not the case in 2020-21.
- So, beyond the bigger decline in GVA/GDP this time, it is the sector that is behind the decline that is more significant.
- While overall GVA is expected to shrink 7.2%, agriculture and allied activities are set to post 3.4% growth.
- During the worst phase of Covid-19 and the nationwide lockdown, it is the farm sector that kept the rest of the economy going.
- If the farm sector had not grown at all, the GVA decline would have worked out to 7.7%, not 7.2%.
- Incidentally, in 2019-20 as well, agricultural growth at 4% surpassed the 3.9% for the economy as a whole.
- Reasons:

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- Agriculture's relatively better performance in the last 2 years is largely a result of consecutive years of good monsoon (and also post-monsoon) rains.
- Recharged groundwater tables and reservoirs getting filled to near capacity led to increase in crop acreages and higher production.
- Besides these, farming operations being exempted from lockdown restrictions also helped.

Why has this not prevented the economic slump?

- The farm sector doing well has not however prevented the current worst economic slump.
- This is because in 1979-80, agriculture's share in India's GDP at constant prices was 33.9%; in 1957-58, it was 48.2%.
- In effect, a drought year in those times invariably translated into low/negative growth rates and vice versa.
- However, the condition is different today. The share of agriculture in real GVA was only 14.6% in 2019-20.
- This is estimated to go up to 16.3% this fiscal, but not enough to make a big difference in the economy even in a bountiful monsoon year.

11.3 India's Agricultural Support

Why in news?

- Organisation for Economic Co-operation & Development (OECD) claimed that agricultural support provided to Indian agriculture is extremely low or negative.

What does OECD report says?

- It estimated that Indian farmers received negative support to the extent of minus Rs 2.36-lakh crore & minus Rs 1.62-lakh crore in 2010 and 2019 respectively.
- This support to farmers was consistently negative during 2000-2019 except in 2000.
- This negative support of minus Rs 1.62-lakh crore is higher than the total budgetary allocation of the Ministry of Agriculture at Rs 1.09-lakh crore in 2019.
- This data considered only market price support and budgetary payments.

How did OECD arrive at this data?

- Data was calculated based on the expenditure on PM-KISAN, National Food Security Mission, crop insurance, input subsidies are covered under its estimates.
- It did not cover expenditure related to the operation of minimum support price and general services.
- Hence massive negative market price support resulted into total negative producer support overshadowing the increase in the budgetary support registering 85% growth between 2015-19.
- As per OECD methods, market price support of a commodity is calculated by multiplying its total production with the gap between domestic price and international prices in a relevant year.

What are the consequences of adopting this methodology?

- This methodology assumes that if no government intervention in the market exists, then domestic & international price of a product will converge resulting in no gap in prices.
- However this gap can still arise due to domestic and international factors- COVID-19 pandemic, weather conditions etc.
- Firstly, if the domestic price for a product is less than its international price then also support for that product would be negative.
- Secondly, a negative market price support for a product in one year can turn into huge positive support in another year due to relative movement of domestic and international prices.
- For instance, in 2018, the domestic price of cotton was lower than the international price, resulting in negative support of minus Rs 5,102 crore.
- However, in the subsequent year, the domestic price exceeded the international price, and the support turned positive to the extent of Rs 4,414 crore.

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- Thirdly, even if in a particular year if government did not provide any additional support compared to previous year then level of support calculated by the OECD can change.
- This will arise if there is a change in either the gap between the domestic price and international price for a commodity, or its production, in the two years.

What can we infer from this?

- The amount of subsidy depends on the methodology adopted in calculating it.
- Given the unpredictability in the inherent data, the total support can move from huge negative to huge positive.
- For India, the negative support as a percentage of the total value of agriculture production has substantially reduced in recent years.
- Rather than being swayed by the OECD numbers suggesting negative support, policymakers & others need to understand the limitations in the underlying methods.
- This will provide a correct perception on the level of support given to agriculture in India.

11.4 Demand for Legal Guarantee MSP

Why in news?

Farmer unions are demanding the legal guarantee of minimum support prices (MSP) announced for various crops which is not available now.

How can MSP be made legally binding?

- There are two ways it can be done.
- One forcing the private buyers to buy crops not below the MSP which can also act as the floor price for bidding in mandi auctions.
- This practise is already prevalent in case of sugarcane crop where mills are required by law to pay growers within 14 days of supply.
- Second way can be buying the entire crop that farmers offer by the government at the MSP.
- In 2019-20, government agencies —FCI,NAFED– procured 77.34 million tonnes (mt) of paddy and 38.99 mt of wheat, at Rs 140,834 crore and Rs 75,060 crore at their respective MSPs.

How much of farmers' produce can the government buy at MSP?

- MSP is now applicable for 23 farm commodities- 7 cereals, 5 pulses, 7 oilseeds & 4 commercial crops and MSP value for these crops amounts to Rs 10.78 lakh crore in 2019-20.
- However all this produce is not marketed as farmers retain part of it for self-consumption, seed for the next season's sowing and to for feed their animals.
- The average marketed surplus ratio for different crops is estimated to be 75% costing over Rs 8 lakh crore.
- This is the MSP value of production that is the marketable surplus — which farmers actually sell.

What is the exact amount that government spends to ensure farmers get their MSP?

- The following statements clearly explain the reality.
- Firstly sugarcane must be excluded from the calculations as they are paid by the sugar mills and not the government.
- Secondly, the government is already procuring many crops –paddy, wheat, cotton, pulses and oilseeds & their combined MSP value exceeds Rs 2.7 lakh crore in 2019-20.
- Thirdly, government agencies need not buy every single grain that comes to the market & procuring even a quarter or third of the market arrivals is enough to lift prices.
- For instance, CCI procured 87.85 lakh bundles out of the current year's projections of 358.50 lakh bundles which has led to open market prices crossing the MSP in most of the mandis.
- Fourthly, crops (wheat & paddy) bought on government account are distributed at super-subsidised rates under the National Food Security Act.

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- The revenues realised from sales would partly offset the expenditures from MSP procurement.
- Hence the government undertaking the maximum required procurement for guaranteeing MSP to farmers may not be more than Rs 1-1.5 lakh crore per year.

What can we infer from this?

- The government undertaking to buy at MSP is definitely better than forcing private players because sugar mills are unable to pay farmers on time despite having Sugarcane (Control) Order, 1966.
- However, even assured government MSP-based procurement is fraught with problems.
- MSPs today does not extend to fruits, vegetables and livestock products that together constitute 45% in the gross value of output of India's agriculture, forestry and fishing sector.
- But extending MSP to all farm produce and guaranteeing it through law is fiscally challenging.
- That is why economists increasingly are in favour of guaranteeing minimum incomes rather than prices to farmers.
- This can be achieved via DBT either on a flat per-acre (as in the Telangana government's RythuBandhu scheme) or per-farm household (Pradhan Mantri Kisan Samman Nidhi) basis.

12. ENVIRONMENT

12.1 Electric Mobility

Why in news?

A shift to electric vehicles will help in the growth of lithium and cobalt industry.

Why there is a need to shift to electric vehicles?

- India is the 3rd largest oil importer in the world in terms of value importing 228.6 MT of crude oil worth $120 billion in 2018–19.
- Shifting to electric vehicles will reduce our dependence on crude oil, reduce carbon emissions, save forex resources & build domestic energy independence.
- In long term this shift is important because these vehicles are sustainable & profitable.
- Also this transition will fine-tune our infrastructure since they are economically and environmentally viable option.

What are the steps taken to introduce electric mobility?

- Government has drafted policies that act as catalysts in propelling the acceptance of electric vehicles.
- Under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME), government has allocated $1.3 billion as incentives for buying electric buses, 3-wheelers and 4-wheelers.
- They will be used for commercial purposes till 2022 & another $135 million is earmarked for charging stations.
- NITI Aayog has given a proposal that a $4.6 billion subsidy will be given for battery makers.
- In September 2019, a consortium was formed by Japanese automobile Suzuki Motor to set a manufacturing unit in Gujarat for producing lithium-ion batteries & electrodes.
- These policies are embedded with the vision to have 30% electric vehicles plying the roads by 2030.

Where are Lithium reserves available?

- Latin America has the famous lithium triangle region.
- These regions comprise of lithium deposits under the salt flats of northwest Argentina, northern Chile, and southwest Bolivia.
- They hold about 80% of the explored lithium of the world & most of the production comes from these countries.

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How does India meets its Lithium demands?

- At present, India's lithium-ion battery demand is fulfilled by imports from China, Vietnam, and Hong Kong.
- But India has a growing thirst for lithium-ion batteries in the last 2 years & its lithium imports have tripled from $384 mn to $1.2 bn.
- In 2019, India's National Aluminium Company (NALCO), Hindustan Copper Limited (HCL) and Mineral Exploration Corporation Ltd (MECL) signed a joint venture agreement.
- They formed KhanijBidesh India Limited (KABIL) to search strategic mineral -lithium and cobalt- abroad for commercial use & to meet domestic requirement.
- India plans to buy lithium from the resource-rich Latin American countries.

How will lithium imports change India's trading relations with Latin America?

- Today Lithium is used as a drug to treat bipolar disorder & soon it will become the metal to treat a world polluted by excessive carbon emissions.
- India's biggest trading partners in Latin America are Brazil, Mexico, and Venezuela & we import 14%-20% of total crude oil from these countries.
- With the progression to electric vehicles, India will start importing lithium and cobalt rather than crude oil.
- This will support battery manufacturers & India's goal in switching to electric mobility.
- This will also influence India's foreign policy as our energy security dependence will shift from West Asia to Latin America.
- India also sent a high-level delegation to have a clear understanding about the availability of lithium and the possibilities of joint ventures.
- This will supply lithium to domestic markets and drive international markets.
- Moreover it provides long-term solution to clean our cities, build new markets, and skill people for new jobs towards an 'Atmanirbhar Bharat'.

13. SCIENCE & TECHNOLOGY

13.2 Anti-disclosure amendment in the Patent Law

Why in news?

- Recently Union government published the Patent (Amendment) Rules, 2020 after a delay of almost two years.
- It has amended the format of the statement that patentees and licensees are required to annually submit to the Patent Office.

What are the existing patent rules?

- As per section 146(2) of patent law, every patentee/licensee is required to file an annual statement to the Indian Patent Office.
- The statement should disclose the information on the extent to which patentee worked the invention in India.
- It has to be as per Form 27 format prescribed under the Patent Rules, 2003.
- Any violation of these rules can trigger compulsory licensing or revoking the patent given under the Patents Act, 1970.

Why this disclosure is important?

- Patents are granted not only to encourage innovation but also to ensure that patentee has worked the invention in India.
- This can help to check abusive use of patent monopoly--excessive pricing or scare supply of the invention.
- This ensures that the benefit reach the public & is sufficiently available to them at reasonable prices.

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What are the issues with existing rules?

- Patentees, licensees & Patent Office have ignored the disclosure requirement.
- Courts also refused to give an interim order in cases where there is infringement of a patent which has not been worked in India.
- There is also significant pressure from MNC's and the United States government to do away with this requirement.
- Hence a PIL was filed before the Delhi High Court in 2015 which brought to the Court's attention the rampant non-filing & defective filing of Form 27 by patentees/licensees.
- It sought direction to the government to strictly enforce the patent working disclosure rules & take action against the violators.
- It also called for a reform of Form 27 stating that the information it sought was insufficient to ascertain the extent of the working of the patent.
- The government gave an undertaking to the court to make appropriate amendments in the Form 27.

What are the new rules?

- The New form requires the patentees/licensees to provide only the following information:

1. Whether the patent has been worked or not in India;
2. If the invention has been worked, the revenue accrued in India from manufacturing &importing the invention into India;
3. If it has not been worked, reasons for the same and the steps taken towards working in India;

- Now they need not provide any information in respect of the quantum of the invention manufactured/imported into India.
- Information w.r.t licenses & sub-licenses granted during the year and meeting of public requirement at a reasonable price is also not required.

What are the issues with new patent rules?

- The new rule removed lots of important information to be submitted in the form.
- Data on the total units of the invention manufactured/imported in India is essential to determine the extent to which it has been worked in India.
- However this data is not available as per new rules & patentees can just self-certify that they've worked the patent without providing appropriate claims on it.
- Disclosure of this data by Bayer in Form 27 played a crucial role in granting India's first compulsory license to Natco for the anti-cancer drug Sorafenib/Nexavar.
- PIL directed a mandatory disclosure of the following information:

1. Price of the invention;
2. Estimated demand, the extent to which the demand has been met;
3. Steps undertaken by the patentee to satisfy the demand.

- However the new rule does not disclose the above information.
- Hence it is difficult to ascertain whether the invention is available to the public in sufficient quantity & at affordable price.

What are the consequences of the new rules?

- The amended rules have damaged the core essence of the patent working requirement and the Form 27 format.

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- The lack of required information can prevent invoking the compulsory licensing if patent abuse takes place or if critical inventions are inaccessible to the public.
- This can lead to adverse consequences for public health of the country.
- Hence government must reconsider its amendments to the form taking into account the PIL recommendations.
- It should re-amend it to restore as well as strengthen its spirit.

13.3 Hyperautomation - The Next Frontier

What is the issue?

- The global hyperautomation market is anticipated to grow at a CAGR (Compound annual growth rate) of 18.9% during 2020-27.
- In this context, here is a look at its features, scope and potentials.

What is hyperautomation?

- Conventional automation or Robotic Process Automation (RPA) performed rule-based tasks.
- RPA was a foundation stone that has made way for users to explore the broader meaning and greater abilities of automation.
- The last few years have seen the emergence and convergence of many powerful technologies related to artificial intelligence, machine learning, and intelligent and cognitive automation.
- The strategic confluence of these technologies is also known and defined as hyperautomation.
- One of the key differentiators of hyperautomation is its ability to loop humans into the process.

What are the key features of hyperautomation?

- **Artificial intelligence (AI)** - AI enables organisations to become Insight Driven Organisations (IDO).
- It relies on the fundamental building blocks of people, process, data and technology being in place and informed by an analytics strategy.
- **Advanced analytics** - The power of data is in its interpretation.
- Organisations that are able to leverage the full power of data and analytics will create unique and sustainable competitive advantage in their marketplace.
- **Intelligent automation** - This relates to leveraging a suite of tools and technologies that emulate and enhance human actions and capabilities.
- The objective is to create higher-than-normal value for the key stakeholders including shareholders, customers, employees and community.
- **Information management** - It is a business-driven approach to designing and implementing next generation solutions and processes.
- This supports businesses globally to better manage, protect, share and innovate with their data.

What is the future scope?

- Artificial intelligence, machine learning, and intelligent automation are amongst the top ten Industry 4.0 technologies.
- These may have the most profound impact on major organisations globally.
- Hyperautomation leverages new and combined capabilities to expand the frontiers of automation.
- Extensive digitalisation of traditional manufacturing plants will be the primary contributor to hyperautomation market.

What are the key potentials of hyperautomation?

- **Workforce enablement** - Hyperautomation helps organisations accelerate their digital transformation journey.

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- Employees will be able to automate the many processes within their role, and get more done faster with the resources available to them [‘doing more with less’].
- Minimising manual tasks enables them to focus on more impactful work, like planning and strategy.
- **Employee upskilling** - Automation is no longer reliant solely on IT skills.
- A business user has thus the potential to become an automation thinker, influencer and leader.
- This could lead to a more hyper-skilled employee base that can achieve better outcomes than before.
- **Systems integration** - With hyperautomation, a company’s old on-premise technology and disparate data systems can communicate seamlessly with the power of integrations.
- **Digital agility** - With many automation technologies, a company can move past the one-off benefits of a single technology to a state of true digital agility and flexibility at scale.
- In all, hyperautomation creates newer and better outcomes such as simpler processes, higher productivity and reliability, ‘less stress’ work environment, and more agile and flexible organisations.

13.4 Draft Science, Technology and Innovation Policy

Why in news?

The government has recently released the draft 5th national Science, Technology and Innovation Policy (STIP).

Why is this significant?

- The policy outlines strategies for strengthening India’s STI ecosystem to achieve the larger goal of Atmanirbhar Bharat.
- Previous STI policies were largely top-driven in formulation.
- The present STIP follows core principles of being decentralised, evidence-informed, bottom-up, experts-driven, and inclusive.
- It aims to be dynamic, with a robust policy governance mechanism that includes periodic review, evaluation, feedback, and adaptation.
- Most importantly, there is a timely exit strategy for policy instruments.

What are the objectives?

- The STIP will be guided by the vision of positioning India among the top three scientific superpowers in the decade to come.
- The aim is to -
    - attract, nurture, strengthen, and retain critical human capital through a people-centric STI ecosystem
    - double the number of full-time equivalent (FTE) researchers, gross domestic expenditure on R&D (GERD) and private-sector contribution to GERD every 5 years
    - build individual and institutional excellence in STI with the aim of reaching the highest levels of global recognition and awards in the coming decade

What is the Open Science Framework?

- STIP provides a forward-looking, all-encompassing Open Science Framework to provide free access for all to findings from publicly funded research.
- Private-sector researchers, students, and institutions will have the same accessibility.
- Output from research that is not funded by the government will be outside the purview of this framework. However, they will be encouraged to participate.
- This framework will be largely community-driven, and supported with necessary institutional mechanisms and operational modalities.
- Open Science fosters more equitable participation in science through increased access to research output. It ensures -
    i. greater transparency and accountability in research

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ii. inclusiveness
iii. better resource utilisation through minimal restrictions on reuse of research output and infrastructure
iv. a constant exchange of knowledge between the producers and users of knowledge

What is the rationale for One Nation, One Subscription?

- The policy proposes buying bulk subscriptions for all journals.
- It thereby envisions free access to all journals, Indian and foreign, for every Indian against a centrally-negotiated payment mechanism.
- Scientists are producers of scientific knowledge in the form of scholarly articles.
- But the consumers of this knowledge such as line departments, innovators, industry, the society at large, etc. are several times larger in number.
- In the present mechanisms, they do not have access to this knowledge.
- R&D institutions in India spend huge amounts of money subscribing to journals, especially the international high impact-factor ones.
- As per a rough estimate, this amount comes to nearly Rs 1,500 crore per annum.
- But still, only a third of the country's total 3.5 lakh-odd researchers get access to these journals.
- Under STIP's payment mechanism, the amount may be higher than what institutions together pay today, but will facilitate access to India's over 1.3 billion people.
- The larger idea behind One Nation, One Subscription is thus to democratise science.

How about participation of women in Science?

- Over the last 6 years, women's participation in S&T has doubled in India; however, overall participation of women in R&D continues to be only about 16%.
- There has been considerable improvement in the participation of women in science education both at the Bachelor's and Master's levels (53% and 55% respectively as per AISHE 2019).
- However, there is a persistent gap at the doctoral level between male (56%) and female graduates (44%).
- In this context, policy interventions in Science will bring transformative change.
- In this regard, the STIP has made recommendations such as -
  i. mandatory positions for excluded groups in academics
  ii. 30% representation of women in selection/evaluation committees and decision-making groups
  iii. addressing issues related to career breaks for women by considering academic age rather than biological/physical age
  iv. a dual recruitment policy for couples
  v. institutionalisation of equity and inclusion by establishing an Office of Equity and Inclusion, etc

What does the policy say about funding in R&D?

- India's gross domestic expenditure on R&D (GERD) stands at 0.6% of GDP.
- This is quite low compared to other major economies that have a GERD-to-GDP ratio of 1.5% to 3%.
- This can be attributed to inadequate private sector investment (less than 40%) in R&D activities in India.
- In technologically advanced countries, the private sector contributes close to 70% of GERD.
- STIP has made some major recommendations in this regard, such as -
  i. expansion of the STI funding landscape at the central and state levels
  ii. enhanced incentivisation mechanisms for leveraging the private sector's R&D participation
- The policy also offers creative avenues for collaborative STI funding through a portfolio-based funding mechanism.

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- It is called the Advanced Missions in Innovative Research Ecosystem (ADMIRE) programme.
- It supports distributed and localised collaborative mission-oriented projects through a long-term investment strategy.
- A national STI Financing Authority, along with an STI Development Bank, needs to be set up to direct long-term investments in select strategic areas.
- The STIP also suggests modification or waiver of General Financial Rules (GFR), for large-scale mission mode programmes and projects of national importance.

13.5 Spectrum Auctions

Why in news?

Recently Department of Telecommunications announced that 4G spectrum auctions for different bands will begin from March 1, 2021.

What are spectrum auctions?

- Cellphones& wireline telephones require signals to connect from one end to another & they are carried through airwaves at designated frequencies to avoid any kind of interference.
- These airwaves are called spectrum which are subdivided into bands having varying frequencies & are owned by the union government.
- These airwaves are sold by Central government through auctions for a certain period of time (20 years) after which validity lapses.
- With the expansion in the number of cellphone, wireline telephone & internet users, more space is required for signals to come.
- Hence Central government auctions the airwaves to companies which are willing to set up required infrastructure to transport these waves from one end to another.

What is the history of spectrum auctions?

- Spectrum auctions were conducted since 2010 (except in 2015) but they are largely unsuccessful due to the high reserve price fixed by the telecom regulator.
- In 2012, 1800 MHz & 800 MHz bands which were put up for sale only a small percent of 1800 MHz band was sold & 800 MHz was unsold completely.
- This unsold spectrum & additional spectrum of 900 MHz band which were auctioned in 2013 but the prices did not change significantly.
- In the 2014 auction, spectrum prices for the 900 MHz and 1800 MHz bands in the metros were much higher than international average.
- In 2016, though the bids were invited for over 2000 MHz spectrum was fixed Rs 5.3-lakh crore, it received only Rs 65,789 crore.
- Nearly 60% of the airwaves put on the block did not find any takers & there was not a single bid for the 700 MHz band due to the high reserve price.

Why is spectrum being auctioned now?

- The last spectrum auction was held in 2016 & government offered 2,354.55 MHz at a reserve price of Rs 5.60 lakh crore.
- Government managed to sell only 965 MHz (40% of the spectrum put up for sale) & the total value of bids received was just Rs 65,789 crore.
- The validity of the airwaves bought by companies is set to expire in 2021 & there was a need for new spectrum auction.
- On March 1 government plans to sell spectrum for 4G in the 700, 800, 900, 1,800, 2,100, 2,300, and 2,500 MHz frequency bands.
- The reserve price of all these bands together has been fixed at Rs 3.92 lakh crore which can go up based on the demand.

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Who are likely to bid for the spectrum?

- Private telecom players- Reliance Jio Infocomm, Bharti Airtel & Vi -are eligible to buy additional spectrum to support the users on their network.
- Apart from these three, foreign companies are also eligible to bid for the airwaves.
- However foreign companies have to either set up a branch in India & register as an Indian company or tie up with an Indian company to retain the airwaves after winning them.

What will the bidding cost the three existing companies?

- Bidders can either buy new spectrum or renew the old spectrum licences which they already have.
- Analysts expect that Bharti Airtel will renew some of its old spectrum & not bid for new spectrum.
- Vi may not participate in this auction as it faces constraints in cash flow.
- However Reliance Jio will renew its existing 44 MHz spectrum & bid for additional spectrum in the 55 MHz band.
- It will incur a total capital expenditure of Rs 240 billion at reserve prices & it has to make an upfront payment of nearly Rs 60 billion if it opts for the long term deferred payment plan.

How will the deferred payment plan work?

- As per this plan, bidders of sub-1 GHz bands 700, 800 and 900 MHz have to pay 25% of the bidding amount now & rest later.
- For the above-1 GHz bands of 1,800, 2,100, 2,300, and 2,500 MHz, bidders have to pay 50% upfront & rest can be paid in equated annual instalments.
- However successful bidders have to pay 3 % of Adjusted Gross Revenue (AGR) as spectrum usage charges excluding the wire line services.

What will the concern in the upcoming auctions?

- Though the final reserve price for 800 MHz spectrum is 18.5% lower than the 2016 price, the price for 1800 MHz & 2300 MHz is 14.5% and 17.5% higher respectively.
- The spectrum price for 700 MHz was cut by 43% still it remains very expensive.
- The operators need to spend nearly Rs 65,000 crore to own 10 MHz of spectrum pan-India.
- Hence none of the existing operators will be in a position to place such an expensive bet with a collective debt of Rs 5- lakh crore.

13.6 Missing Supermassive Black Hole

Why in news?

A supermassive black hole, which is estimated to weigh up to 100 billion times the mass of the Sun, is seemingly missing.

What is the finding?

- Scientists have been looking for the black hole using NASA's Chandra X-ray Observatory and Hubble Space Telescope.
- They have so far found no evidence that it is anywhere to be found.

Where is it supposed to be?

- The black hole is supposed to be located in Abell 2261.
    - Abell 2261 is an enormous galaxy cluster that is about 2.7 billion light-years away from the earth.
- One light-year is the distance that a beam of light travels in one Earth year, which is 9 trillion km.
- On the scale of the Universe, astronomers measure the distance from stars and galaxies in the time it takes for light to reach us.
- So, when we look at a celestial object, we are looking at how it appeared that long ago in the past.

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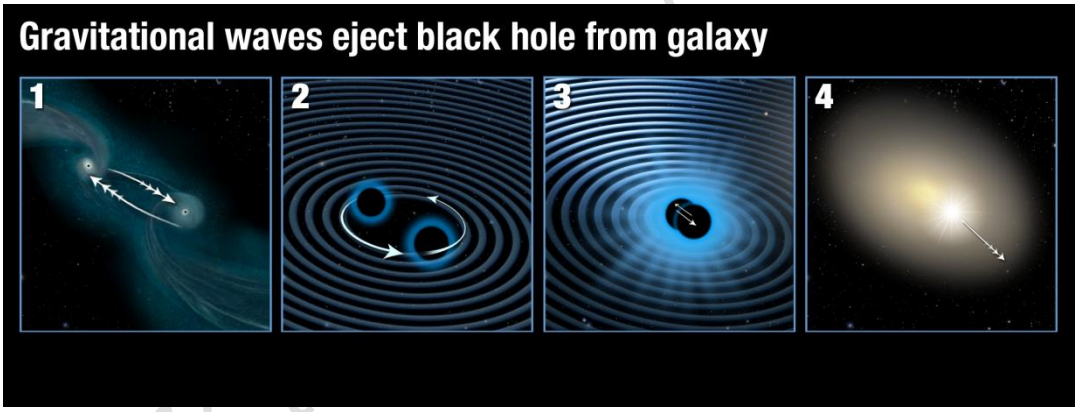
- At 2.7 billion light-years away, the Abell galaxy is at an overwhelmingly large distance away from the earth.

What could have happened?

- Every large galaxy in the universe has a supermassive black hole at its centre, whose mass is millions or billions of times that of the Sun.
- The black hole at the centre of our galaxy, the Milky Way, is called Sagittarius A*, and is 26,000 light-years away from Earth.
- Scientists have been using data gathered in 1999 and 2004 to look for the centre of the Abell galaxy.
- But they have so far been unable to find its black hole.
- A reason for this could be that Abell's black hole has been ejected from the centre of the galaxy.
    - This is based on 2018 data from NASA's Chandra Observatory.
- This may have happened because of the merging of two smaller galaxies to form Abell.
- In the process, both of their black holes merged to form an even bigger black hole.

What is 'Recoiling' black holes?

- When two black holes merge, they release what are known as gravitational waves.
    - These are invisible ripples travelling at the speed of light, which squeeze and stretch anything in their path.
- During the merger, when the amount of waves generated in one direction is stronger than another, the new big black hole can be sent away from the centre of the galaxy into the opposite direction.
- This is known as a "recoiling" black hole.



What is the significance?

- So far, scientists are yet to find definitive evidence for recoiling black holes.
- They are yet to discover whether supermassive black holes can merge and release gravitational waves.
- As of now, only mergers of significantly smaller black holes have been verified.
- So, if the current hypothesis for Abell galaxy turns out to be true, it would mean a major breakthrough in astronomy.

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PRELIM BITS

14. HISTORY, ART & CULTURE

Cherry Blossom Mao Festival

- In Manipur, this Festival was held at Mao area of Senapati district marking the beginning of pink season in the district.
- The Mao area is known for Cherry Blossom, a plant which is popularly known as Sakura in Japan.
- Manipur government started organizing the festival from 2017 onward.
- The festival featured the picturesque landscape of Mao town adorned with Cherry Blossom flowers.

Archaeological Excavations in Tamil Nadu

- The Central Advisory Board for Archaeology (CABA) has given permission to excavate seven sites in Tamil Nadu for 2020-21.
- Tamil Nadu state archaeology department will soon begin excavations at three sites - Korkai (Tuticorin), Gangaikonda Cholapuram (Ariyalur) and Mayiladumparai (Krishnagiri).
- This is in addition to the ongoing excavations at Keeladi cluster, Adichanallur, Sivagalai and Kodumanal.
- The department will also conduct field studies in Tiruvannamalai, Salem, Krishnagiri and Vellore.
- The Korkai excavation will reveal more about the Thamirabarani river valley civilization because excavations are already on in sites such as Adichanallur and Sivagalai in the same region.

World's Oldest Cave Painting

- The world's oldest known cave painting was discovered in the limestone cave of Leang Tedongnge of Indonesia.
- The painting made using red ochre pigment depicts a wild boar endemic to the Sulawesi island of Indonesia.
- The painting of the Sulawesi warty pig seems to be the world's oldest surviving representational image of an animal.
- It was dated using a method called **U-series isotope analysis**.
- This analysis uses calcium carbonate deposits, also called 'cave popcorn', that form naturally on the cave wall surface to determine its age.
- It is dated that the minimum age of the painting to be around 45,500 years, which means the painting was made before this.

Risa

- Tripura Chief Minister has made it his style statement to sport the Risa, a customary hand-woven cloth used by Tripura's tribal communities.
- The customary Tripuri female attire has three parts - Risa, Rignai and Rikutu.
- **Risa** is used as a head gear, stole, female upper cloth or presented to honour a distinguished recipient.
- Adolescent Tripuri girls are first given risa to wear in an event called Risa Sormani. The event involves prayers to a Lampra god.
- **Rignai** is primarily used to cover lower part of the body.
- **Rituku** covers the upper half of the body, wrapping it all around.
- It is also used to cover the head of newly married Tripuri women.

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Patharughat Uprising

- Before the Jallianwallah Bagh massacre, in 1894, more than a hundred peasants fell to the bullets of the British in Patharughat village of Assam.
- The unarmed peasants were protesting against the increase in land revenue levied by the colonial administration.
- **Reason** - After the British annexation of Assam in 1826, surveys of the lands of the state began.
- On the basis of such surveys, the British began to impose land taxes.
- In 1893, the British decided to increase agricultural land tax by 70 - 80%.
- Up until then the peasants would pay taxes in kind or provide a service in lieu of cash.
- Across Assam, peasants began protesting the move by organising Raij Mels, or peaceful peoples' conventions.
- Despite these gatherings being democratic, the British perceived them as breeding grounds for sedition and came down on them heavily.

15. GEOGRAPHY

Thousand Islands

- Thousand Islands (Kepulauan Seribu) are chain of islands north of Jakarta's coast, Indonesia.
- There are exactly 110 islands that together form a District, encompassing the Pulau Seribu National Marine Park.
- These islands are initially caused by the volcanoes.
- Later, the shifting of tectonic plates results in their consolidation as a grouping of small islands in a relatively small area.

Virunga National Park

- Six rangers have been killed in the Virunga National Park in the Democratic Republic of the Congo (DRC).
- Virunga National Park stretches from the Virunga mountains in the south, to the Rwenzori mountains in the north.
- It borders Volcanoes National Park in Rwanda and Rwenzori Mountains National Park and Queen Elizabeth National Park in Uganda.
- Established in 1925, it is Africa's first national park, which is famous for its **mountain gorillas**.
- It is a United Nations Educational, Scientific and Cultural Organization. (UNESCO)-designated World Heritage Site since 1979.

Great Himalayan National Park

- Established in 1984, it was formally declared as a National Park in 1999.
- It is located in the Kullu region of Himachal Pradesh at an altitude between 1500 and 6000 m.
- The flora and fauna species here are protected under the Wildlife Protection Act of 1972; hence any sort of hunting is not permitted.
- In 2010, both the Sainj and Tirthan Wildlife Sanctuaries were added to GHNP.
- In 2014, GHNP was added to the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites under the criteria of 'outstanding significance for biodiversity conservation'.

Shoolpaneshwar Wild Life Sanctuary

- It was created in 1982 as 'Dumkhal Sanctuary' - home for sloth bears.

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- It is found at the congregation of Vindhyan-Satpura hill ranges.
- The sanctuary derives its name "Shoolpaneshwar" from a temple of Lord Shiva, which once existed in this region on the banks of river Narmada.
- The area is predominantly tribal with 'Vasavas' as the main tribe.

Indian Sunderbans

- Zoological Survey of India's (ZSI's) publication 'Birds of the Sundarban Biosphere Reserve' states that the Indian Sunderbans is home to 428 species of birds.
- Indian Sunderbans is part of the world's largest mangrove forest.
- It comprises of the Sunderban Tiger Reserve - home to Royal Bengal Tigers - is a World Heritage Site and Ramsar Site.
- Birds, like Masked Finfoot and Buffy fish owl, are recorded only here.
- The area is home to nine out of 12 species of kingfishers of the country as well rare species such as the Goliath heron and Spoon-billed Sandpiper.
- The mudflats and wetlands of Sunderbans act as a stopover site for migratory flight south (south wards) and back.
- [The mudflats exposed in the low tides, rich in microorganism, deposited during tidal activity are ideal feeding for migratory birds.]

Vanadium in Arunachal

- Arunachal Pradesh could be India's prime producer of Vanadium.
- In India, Vanadium is recovered as a by-product from the slag collected from the processing of vanadiferous magnetite ores (iron ore).
- But now promising concentrations of vanadium has been found in the palaeo-proterozoic carbonaceous phyllite rocks in the Depo and Tamang areas of Arunachal Pradesh.
- This was the first report of a primary deposit of vanadium in India with an average grade of 0.76% V2O5 (vanadium pentoxide).
- Exploration is being carried out by Geological Survey of India (GSI).
- Vanadium mineralisation in Arunachal Pradesh is geologically similar to the "stone coal" vanadium deposits of China in carbonaceous shale.
- This high vanadium content is associated with graphite with fixed carbon content of up to 16%.

Vanadium

- In its pure form, Vanadium is a soft, grey and ductile element which is primarily derived from mined iron ore, carbonaceous shale or phyllites and steel slag.
- It is high-value metal used to strengthen steel and titanium.
- It increases the fuel-efficiency in automotive and aviation industries due to its high strength-to-weight ratio.
- It forms the integral part of vanadium redox batteries that have the least ecological impact in energy storage.
- Vanadium alloys are durable in extreme temperature and environments, and are corrosion-resistant.

Lithium Reserves in India

- Atomic Minerals Directorate for Exploration and Research (AMD), an arm of the Department of Atomic Energy, is carrying out domestic exploration for lithium in geological domains of the country.
- [India currently imports all its lithium needs. China is a major source of lithium-ion energy storage products being imported into the country.]
- AMD's survey has found the presence of 1,600 tonnes of lithium resources in the pegmatites (igneous rocks) of Marlagalla-Allapatna region, along the Nagamangala Schist Belt of Karnataka.
- Lithium can be extracted either through solar evaporation of large brine pools or by hard-rock extraction of the ore.

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- In India, there is some potential for recovering lithium from the brines of Sambhar and Pachpadra in Rajasthan, and Rann of Kachchh in Gujarat.
- The major mica belts in Rajasthan, Bihar, and Andhra Pradesh, and the pegmatite belts in Odisha and Chhattisgarh, are the other domains.
- To know more about the lithium import agreement, click here.

Ratle Hydro Power Project

- The Union Cabinet has approved the investment to the Ratle Hydro Electric Project.
- The investment will be made by a new Joint Venture Company (JVC).
- This JVC will be incorporated between National Hydroelectric Power Corporation and Jammu & Kashmir State Power Development Corporation Ltd. with equity contribution of 51% and 49% respectively.
- Ratle Hydro Electric Project is located on **river Chenab** in Kishtwar district of Union Territory of Jammu and Kashmir.
- The Power generated from the Project will help in providing balancing of Grid and will improve the power supply position.

16. POLITY

Vertical and Horizontal Reservations

- **Vertical reservation** refers to as reservation for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC).
- It applies separately for each of the groups specified under the law.
- **Horizontal reservation** refers to the equal opportunity provided to other categories of beneficiaries such as women, veterans, and individuals with disabilities, cutting through the vertical categories.
- It is applied separately to each vertical category.
- Through the Saurav Yadav case, the Supreme Court clarified the position of law on the interplay of vertical and horizontal reservations.
- The court ruled against the Uttar Pradesh (UP) government.
- It held that if a person belonging to an intersection of vertical-horizontal reserved category had secured scores high enough to qualify without the vertical reservation,
    1. The person would be counted as qualifying without the vertical reservation, and
    2. The person cannot be excluded from the horizontal quota in the general category.

Eco-sensitive Zone in Gujarat

- Tribals have been protesting against a notification of the Ministry of Environment, Forest and Climate Change.
- This notification had classified 121 villages around the Shoolpaneshwar Wildlife Sanctuary in Narmada district, Gujarat as eco-sensitive zones.
- Tribals feel that the simultaneous implementation of this notification and the formation of SoUTA could dilute the power vested with villagers under the Panchayat (Extension of Scheduled Areas) Act, 1996.
- [SoUTA - The Statue of Unity Area Development and Tourism Governance Authority, or Statue of Unity Tourism Authority.]
- To know more about the Panchayat (Extension of Scheduled Areas) Act, 1996, click here.
- **Statue of Unity Tourism Authority** was established by Statue of Unity Area Development and Tourism Governance Authority Act of the Gujarat government.

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- It has powers ranging from acquiring land for any development project to taking punitive action against those violating of encroaching it.
- It will define the limits of the tourism development area.
- It can be empowered to acquire immovable property under the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

Cigarettes Draft Bill

- The Centre has drafted this bill to increase the age to allow sale of cigarettes and tobacco products from the current 18 years to 21 years.
- The bill has proposed the penalty for smoking in restricted areas has been increased from ₹200 to ₹2,000.
- Trade and commerce in cigarettes or other tobacco products should be in sealed and intact packaging.
- The sale of illicit products will lead to imprisonment of up to one year and a fine of ₹50,000.

Rastriya Kamdhenu Aayog

- It is a high powered permanent advisory body that helps the Central Government to develop programmes for conservation, sustainable development and genetic upgradation of indigenous breeds of cows.
- It will function as an integral part of Rashtriya Gokul Mission.
- It is constituted to organize animal husbandry on modern and scientific lines and to take steps for preserving and improving breeds.
- It is also constituted to prohibit the slaughter, of cows and calves and other milch and draught cattle.
- It will review existing laws, policies and will suggest measures for optimum economic utilization of cow wealth for enhanced production and productivity.

Ladakh Committee

- The Centre has decided to form a committee to protect the language, culture and land of Union Territory of Ladakh.
- This will ensure citizen's participation in the development of Ladakh.
- The Committee will be headed by the Minister of State for Home.
- It will include elected representatives from Ladakh, Ladakh Autonomous Hill Development Council, central government, and the Ladakh administration.

Industrial Development Scheme for J&K

- The Cabinet Committee on Economic Affairs (CCEA) has approved a scheme for the industrial development of Jammu & Kashmir.
- This is a Central Sector scheme with a proposed outlay of ₹28,400 crore up to 2037.
- It would generate employment leading to the socio -economic development of the area.
- Companies will get capital intensive incentives, capital interest subvention, working capital incentive and GST-linked incentives.
- The scheme is made attractive for both smaller and larger units.
- Smaller units with an investment in plant & machinery up to ₹50 crore will get a capital incentive of up to ₹7.5 crore and get capital interest subvention at the rate of 6% for maximum 7 years.
- All existing units will be able to avail working capital interest incentive at the annual rate of 5% for 5 years and the maximum limit of incentive has been set at ₹1 crore.

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17. GOVERNMENT INITIATIVES

Kochi-Mangaluru Natural Gas Pipeline

- This 450 km long gas pipeline has been built by Gas Authority of India Limited i.e., GAIL (India) Ltd.
- This pipeline marks an important milestone towards the creation of 'One Nation One Gas Grid'.
- It will carry natural gas from the Liquefied Natural Gas (LNG) Regasification Terminal at Kerala's Kochi to Karnataka's Mangaluru.
- It will supply eco-friendly Piped Natural Gas (PNG) to households and Compressed Natural Gas (CNG) to the transportation sector.
- It will also supply Natural Gas to commercial and industrial units across the districts along the pipeline.
- To overcome the hurdle of laying the pipeline to cross water bodies at many locations, the Horizontal Directional Drilling method was used.

Sagarmala Seaplane Services Project

- Sea Plane will utilise the nearby water bodies for take-off and landing.
- Ministry of Ports, Shipping and Waterways kicked off the project of Sagarmala Seaplane Services (SSPS) with potential airline operators.
- The joint development and operation of SSPS on the select routes will be undertaken by forming a Special Purpose Vehicle (SPV) with **Sagarmala Development Company Limited** (SDCL).
- [SDCL would execute and implement the SDCL project.
- SDCL comes under the administrative control of the Shipping Ministry.]
- The proposed Origin-Destination pairs are developed under **Hub and Spoke model.**
- One Seaplane Service is already in operation between Kevadia and Sabarmati Riverfront in Ahmedabad.

National Internet Exchange of India

- National Internet Exchange of India (NIXI) will offer free Internationalized Domain Name (IDN) in any of the 22 official Indian languages along with every IN domain booked by the registrant.
- [.IN is India's Country Code Top Level domain (ccTLD).]
- NIXI is a not for profit Organization under Section 8 of the Companies Act, 2013 and was registered in 2003.
- It was set up for peering of Internet Service Providers (ISPs) among themselves to route the domestic traffic within the country, instead of taking it all the way to US/Abroad.
- NIXI is working for spreading the internet technology to Indian citizens through the following activities: -
    1. **Internet Exchanges** through which the internet data is exchanged amongst ISPs and between ISPs and the Content Delivery Networks (CDNs).
    2. **IN Registry**, managing and operation of IN country code domain and IDN domain for India.
    3. Indian Registry for Internet Names and Numbers (**IRINN**), managing and operating Internet protocol (IPv4/IPv6).

Indian Registry for Internet Names and Numbers

- IRINN, a non-profit organization, is a division functioning under NIXI.
- It was previously known as National Internet Registry (NIR).
- It provides allocation and registration services of IP addresses and Autonomous System (AS) numbers, and internet-related information to its Affiliates at national level.
- NIR is an entity under the Regional Internet Registry (RIR) which is Asia Pacific Network Information centre (APNIC).
- NIXI was recognized by APNIC in 2012 to become the NIR for India.

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Double-stack Container Train

- The world's first double-stack long-haul container train was flagged off from New Ateli, Haryana to New Kishanganj, Rajasthan.
- This train is to be operated in the 306-km Rewari-Madar section of the Western dedicated freight corridor (DFC).
- One train carries 360 10-feet container equivalent units (TEU), which is equivalent to 270 high capacity trailer trucks.
- The speed of freight trains is expected to be increased to a maximum of 100 km per hour (kmph) from the current maximum speed of 75 kmph.
- The DFC Corporation of India is currently constructing the Western DFC (1,506 km) and Eastern DFC (1,875 km).
- To know more about the Dedicated Freight Corridor, click here.

Delhi-Varanasi High Speed Rail Corridor

- The proposed plan for Delhi Varanasi High Speed Rail (DVHSR) Corridor will connect Delhi with major cities like Mathura, Agra, Etawah, Lucknow, Raebareli, Prayagraj, Bhadohi, Varanasi and Ayodhya.
- With the start of Light Detection and Ranging Survey **(LiDAR) Survey**, HSR work gathered momentum for DVHSR Corridor.
- National High Speed Rail Corporation Ltd. (NHSRCL) is adopting LiDAR technology for the DVHSR survey.
- Also, NHSRCL has been entrusted to prepare the Detailed Project Reports for seven HSR Corridors.
- LiDAR survey technique will be used for ground survey in all the corridors to provide the ground details faster.
- **Ground survey** is a crucial activity for any infrastructure project as the survey provides accurate details of areas around the alignment.
- This technique uses a combination of Laser data, GPS data, flight parameters and actual photographs to give accurate survey data.
- During the Aerial LiDAR survey, 300 m (150 m on either side) of area around the proposed alignment is being captured for the survey purpose.
- After data collection, 3D Topographical map of 50 m corridor on either side of the proposed alignment on a scale of 1:2500 will be available for designing of the vertical & horizontal alignment, structures, etc

Deferring Fuel Efficiency Regulations

- Auto industry wants the government to defer the implementation of Corporate Average Fuel efficiency (CAFE-2) regulations and BS-VI stage II norms to April 2024.
- As of now, the CAFE-2 norms that aim to make cars more fuel efficient are set to come into effect in 2022 and BS-VI stage II norms are set to come into force beginning April 2023.
- The growth rate of passenger vehicle (PV) sales has slowed down over the last decade and more so over the last five years.
- Almost 50% of the car buyers in India are first-time buyers and since price elasticity for car purchase is high in India, it is a major factor for slowdown in growth.
- If rising cost of raw materials is a factor, high tax rates, rising service tax and insurance cost, and shift from BS-IV to BS-VI in a quick time has lifted the acquisition cost.
- The industry has made the above representations to defer the implementation due to the sales suffered due to pandemic.

National Startup Advisory Council

- The Central Government has decided to nominate the non-official members on the National Startup Advisory Council.

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- These members would represent various stakeholders such as founders of startups, veterans who have scaled companies in India, persons representing investors into startups, etc.,
- The term of these members shall be for a period of two years or until further orders, whichever is earlier.
- Department for Promotion of Industry and Internal Trade (DPIIT) had constituted the 'National Startup Advisory Council' in 2020.
- It would advise the Government on measures needed to build a strong ecosystem for nurturing innovation and startups in the country.
- **Chairman** will be the Minister for Commerce & Industry.
- **Convener** of the Council will be the Joint Secretary, Department for Promotion of Industry and Internal Trade.
- Ex-officio Members - Nominees of the concerned Ministries / Departments / Organisations not below the rank of Joint Secretary.
- **Functions** - The council will facilitate public organizations to assimilate innovation to improve public service delivery, promote creation, protection and commercialization of intellectual property rights.
- It will suggest measures to make it easier to start, operate, grow and exit businesses by reducing regulatory compliances and costs.
- It will also suggest measures to promote ease of access to capital for startups, incentivize domestic capital for investments into startups, and mobilize global capital for investments in Indian startups.

Institutions of Eminence

- Indian universities and colleges with the Institutions of Eminence (IOEs) tag could now set up campuses in foreign countries.
- IoEs shall be permitted to start a maximum of three off-campus centres in five years, but not more than one in an academic year.
- In case of the public institutions with IoE tag, the government will provide funding up to Rs 1,000 crore to public institutions.
- For private institutions with IoE tag, there will be no financial support.
- But they will get entitled to more autonomy as a special category Deemed University.
- To know more about Institutions of Eminence, click here.

Terminating Iron Ore Mine Leases

- Ministry of Mines has prepared the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession (Amendment) Rules, 2021, to amend the Minerals Concession Rules, 2016.
- It has proposed to terminate the iron ore leases of those mines that have,
  1. Not started production after lapse of 7-8 months of auction and
  2. Not maintained minimum dispatch quantity up to the level required under Rule 12A of MCR for three consecutive quarters.
- It is proposed to strengthen the norms of minimum production / dispatch through amendment of Rule 12A of the MCR Rules, 1960, to ensure sustained supply of mineral in the market in future.
- Rule 12A would be amended to make the bidder to make payment equal to the revenue share and other

Pradhan Mantri Kaushal Vikas Yojana

- It is the India's largest outcome based skill certification scheme.
- It is implemented by National Skill Development Corporation (NSDC), under the Ministry of Skill Development & Entrepreneurship.
- It would enable a large number of Indian youth to take up industry-relevant skill training that will help them in securing a better livelihood.
- Individuals with prior learning experience or skills will be assessed and certified under Recognition of Prior Learning (RPL).
- Training and Assessment fees are completely paid by the Government.

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statutory levies that is payable at the level of minimum production/ dispatch targets on a quarterly basis.

Shramshakthi Portal

- Ministry of Tribal Affairs (MoTA) is launching a National Migration Support Portal called ShramShakti.
- This would effectively help in the smooth formulation of State and National level programs for migrant workers.
- MoTA also launched Shram-Saathi, a training manual for migrant workers.

Pradhan Mantri Kaushal Vikas Yojana 3.0

- Third phase of Pradhan Mantri Kaushal Vikas Yojana (PMKVY 3.0) was launched for the period of 2020-2021.
- It would make skill development more demand-driven and decentralised in its approach, with focus on digital technology and Industry 4.0 skills.
- It will be implemented in a more decentralized structure with greater responsibilities and support from states/UTs and districts.
- District Skill Committees, under the guidance of State Skill Development Missions, will play a key role in addressing the skill gap and assessing demand at the district level.
- PMKVY 3.0 will be more trainee-centric and learner-centric.
- It will be a propagator of vocational education at an early level for youth to capitalize on industry-linked opportunities.

Draft Arctic Policy

- The Indian government has unveiled its draft Arctic policy Roadmap for Sustainable Engagement. This draft rides on five pillars:
    1. Science and research activities,
    2. Economic and human development cooperation,
    3. Transportation and connectivity,
    4. Governance and international cooperation, and
    5. National capacity building.
- The draft spells out goals in India's Arctic Mission such as,
    1. To better understand the scientific and climate-related linkages between the Arctic and the Indian monsoons;
    2. To harmonise polar research with the third pole (the Himalayas)
    3. To advance the study and understanding of the Arctic within India.
- India already has a research station in the Arctic, Himadri, for the research work. Also, India has an 'Observer' status in the Arctic Council.

Arctic Council

- It is an intergovernmental forum established by the eight Arctic States through the Ottawa Declaration of 1996.
- It discusses and addresses issues concerning the Arctic region.
- Members - Canada, Denmark, Norway, Russia, USA, Finland, Sweden and Iceland.
- Besides these 6 organisations representing the indigenous people of the Arctic region is granted the status of permanent participants.
- All decision-making happens through consensus between the eight members, and in consultation with the permanent participants.

National Baseline Geoscience Data Generation Programmes

- To expedite exploration activities in the country, Geological Survey of India (GSI), has embarked upon an ambitious scheme to complete some major National level surveys by 2024:
    1. National Geochemical Mapping (NGCM),
    2. National Geophysical Mapping (NGPM),
    3. National Aero Geophysical Mapping Program (NAGMP).

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- GSI would adopt deep penetration geophysical techniques such as Magneto-Telluric Surveys and Deep Seismic Reflection Surveys (DSRS).
- It has also initiated the National Geoscience Data Repository (NGDR).
- **National Geochemical Mapping (NGCM)** is an all India program to cover the entire surface area of India by geochemical sampling.
- It will generate distribution pattern of 62 elements (samples collected at 1km x 1km grid) for managing and developing natural resources, etc.
- **National Geophysical Mapping (NGPM)** program has been systematically generating basic and derived maps of Bouguer (Gravity) Anomaly and IGRF corrected magnetic total field maps of the country.
- For this, it conducts ground gravity and magnetic surveys in 1: 50,000 scale with an observation density of one station in 2.5 sq. Km., to cover the entire country with preference to Obvious Geological Province areas.
- **National Aero Geophysical Mapping Program (NAGMP)** tries to delineate concealed, deep seated structure/ litho-units capable of hosting mineralization, etc.
- It is for the first time that the multi-sensor aero-geophysical surveys (magnetic gradiometry and spectrometric) are being carried out.
- It is done by adopting such large regional scale survey parameters of 300 m traverse line spacing with aircraft flown at 80 m above ground level.
- **National Geoscience Data Repository (NGDR)** was developed by GSI is in consultation with BISAG-N.
- [BISAG-N or Bhaskaracharya Institute for Space Applications and Geoinformatics is a national institute under Ministry of Information & Technology]
- NGDR is a flagship initiative for collation of all the geoscience data of the country involving GSI, other national organizations, private sector agencies working in the domain and other stakeholders.
- It will integrate the collected data by GSI and the similar organizations to build a repository on the digital medium entailing multiple user access.
- It is planned that all the stakeholders from India and across the globe who are willing to participate in the current auction regime for allocation of mineral acreages will be able to use the NGDR.
- The planned Baseline Geoscience Data Collection campaign would lead to a database, which will be the input for future exploration programs.

FIST Scheme

- The Fund for Improvement of Science and Technology (FIST) Advisory Board (FISTAB) meeting was held recently.
- The FIST Scheme was launched in 2000 to strengthen the Science and Technology (S&T) infrastructure.
- It has played a pivotal role in the strengthening of both the teaching and research infrastructure in different academic and research institutions.
- It is considered as complimentary support for enabling Departments/ Centres/ Schools/ Colleges to pursue research activities more effectively.
- The duration of support for each project will be for a period not exceeding 5 years.

Public Safety Rules 2017

- The situation turned violent when few farmer groups deviated from the agreed route and marched towards central Delhi.
- The Union government issued orders to temporarily suspend Internet in some areas of Delhi under a rarely used provision of a British era Act.
- The order was issued under the Temporary Suspension of Telecom Services (Public Emergency or Public Safety Rules 2017) of the Indian Telegraph Act, 1885.

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- The rules empower the Union Home Secretary and a State's Home Secretary to pass directions to suspend the telecom services in an area due to public emergency or public safety.
- All such orders have to be reviewed by a committee headed by the Cabinet Secretary within five days.

M-sand Policy

- Rajasthan government has brought the policy on M-sand (manufactured sand), which would be a "game changer" for the construction industry.
- [M-sand is produced after crushing hard granite stones and rocks extracted from quarries.]
- This policy would give industry status to the units producing it for construction work.
- It would reduce the dependence on natural bajri (riverbed sand).
- The policy will enable the investors to set up M-sand units by utilising the incentives and facilities offered by the State government.

18. BILATERAL RELATIONS

Tampon Tax Abolition

- The United Kingdom abolished 5% Value Added Tax (VAT) on women's sanitary products, often referred to as the tampon tax.
- It now joins the list of countries which have already eliminated this tax, which includes India, Australia and Canada.
- Until December 31, the UK was a part of the EU, where period products like sanitary napkins and tampons are classified as non-essential, and member states are required to levy a 5% tax on them.
- As the UK is out of the EU, it is not bound by its directives.
- In the Republic of Ireland, however, there is no VAT on such products despite the country being an EU member.
- This is because Ireland's tax rates were in place before the EU imposed its own tax laws.
- In 2020, Scotland became the first country in the world to make period products free of cost to those who need them.

Lithium Import

- India's state-owned Khanij Bidesh India Ltd., (KABIL) inked a pact with an Argentine firm to jointly prospect lithium in Argentina.
- [Lithium is a crucial building block of the lithium-ion rechargeable batteries that power electric vehicles (EVs), laptops and mobile phones.]
- **Khanij Bidesh India Ltd.** is a state-owned joint venture company that was set up in 2019.
- It was set up by three Central Public Sector Enterprises namely National Aluminium Company Ltd. (NALCO), Hindustan Copper Ltd. (HCL) and Mineral Exploration Company Ltd. (MECL).
- The equity participation of these companies is in the ratio of 40:30:30.
- KABIL was set up with a specific mandate to acquire strategic mineral assets such as lithium and cobalt abroad.
- It will ensure a consistent supply of these minerals to Indian market.

Mahatma Gandhi Institute of Education for Peace and Sustainable Development

- MGIEP is a United Nations Educational, Scientific and Cultural Organisation's (UNESCO's) Category 1 Research Institute.

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- It was established by UNESCO in cooperation with the Government of India in 2012.
- It will support member governments, provide advocacy, commission research and enhance capacity building.
- It focuses on mobilising the world's youth to put into practice in their own communities the UN's Sustainable Development Goals.
- It will act as a clearing house for Education for Sustainable Development (ESD) and Peace Education.
- Both MGIEP and UNESCO will play a major role in the implementation of the National Educational Policy - 2020.

Treaty on the Prohibition of Nuclear Weapons

- Adopted in 2017, the legally binding United Nations (UN) Treaty on the Prohibition of Nuclear Weapons (TPNW) is entering into force now.
- India reiterated that it is neither party to nor bound by any obligations of this international pact.
- TPNW includes a comprehensive set of prohibitions on participating in any nuclear weapon activities.
- These include undertakings not to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons.
- The Treaty also prohibits the deployment of nuclear weapons on national territory and assistance to any State in conduct of prohibited activities.
- States parties will be obliged to prevent and suppress any activity prohibited under the TPNW.
- It obliges States parties to provide adequate assistance to individuals affected by the use or testing of nuclear weapons.
- It also obliges them to take necessary measure of environmental remediation in areas under its jurisdiction or control contaminated due to the use of nuclear weapons.

IGN Framework

- India has said that the United Nations Security Council (UNSC) needs inclusive reforms to act effectively.
- India, along with Brazil, Japan and Germany are pressing for urgent reform of the UNSC and for a permanent seat in it.
- For this, in 2008, the UN General Assembly has decided to facilitate the reform process through the Intergovernmental Negotiations (IGN) framework on equitable representation and expansion of the UNSC.
- The UNGA's adoption of a 2015 resolution to allow the IGN on the basis of a framework document generated some enthusiasm.
- But, it was dampened by the U.S., Russia and China being opposed to serious reform of the Council.
- In any case, the exercise has been deferred in view of the pandemic.

Cairn and India

- Permanent Court of Arbitration (PCA) awarded Cairn Energy an amount of $1.2 billion in damages for the tax authorities' decision to take by force and subsequently sell the company's shares, etc.
- Cairn has said that it may begin attaching Indian assets including bank accounts in different world capitals, unless the government resolves to discuss paying the amount awarded.
- It would consider this extreme option if India did not respond, as it was under pressure from its shareholders who expect early resolution.
- It said that the U.K.-India Bilateral Investment Treaty, the UNCITRAL arbitration rules, and the New York Convention to which India is a signatory, that would be breached if India fails to pay the dues.
- To know more about Permanent Court of Arbitration, click here.

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19. ECONOMY

Payments Infrastructure Development Fund

- This fund was operationalised by the Reserve Bank of India (RBI) to increase payments acceptance infrastructure by adding 30 lakh touch points every year in Tier-3 to Tier-6 centres.
- There would be special focus on the north-eastern states.
- An Advisory Council, under the chairmanship of RBI Deputy Governor BP Kanungo, has been constituted for managing the PIDF.
- The types of acceptance devices to be covered under the scheme are physical PoS, mPoS, GPRS, PSTN, and QR code-based payments.
- [mPoS - mobile PoS, GPRS - General Packet Radio Service, PSTN - Public Switched Telephone Network]
- However, payment methods that are not inter-operable would not be considered under the PIDF.
- PIDF scheme is on a reimbursement basis and accordingly, the claim has to be submitted only after making payment to the vendor.
- The maximum cost of the physical acceptance device eligible for subsidy is Rs 10,000 (including one-time operating cost up to Rs 500).
- The maximum cost of the digital acceptance device eligible for subsidy is Rs 300 (including onetime operating cost up to Rs 200).

International Financial Services Centres Authority

- International Financial Services Centres Authority (IFSCA) has become an associate member of the International Organization of Securities Commissions (IOSCO).
- The IOSCO membership will provide the IFSCA a platform to exchange information at the global level on areas of common interests.
- IOSCO platform will enable the IFSCA to learn from the experiences and best practices of the regulators of other well established financial centres.
- The first International Financial Services Centre (IFSC) in India has been set up at the Gujarat International Finance Tec-City (GIFT).
- To regulate such institutions, the government established IFSCA with its head office in Gandhinagar, Gujarat.

International Organization of Securities Commissions

- It is the international body established in 1983 that brings together the world's securities regulators.
- It develops, implements and promotes adherence to internationally recognized standards for securities regulation.
- It works intensively with the G20 and the Financial Stability Board (FSB) on the global regulatory reform agenda.
- It works closely with the G20 nations and the FSB, in setting up the standards for strengthening the securities markets.
- The IOSCO Objectives and Principles of Securities Regulation have been endorsed by FSB as one of the key standards for sound financial systems.

Bank Investment Company

- A Bank Investment Company (BIC) would be established by the government under Companies act, 2013.
- BIC would act as a core investment company and will hold more than 50% shares in Public Sector Banks (PSBs).
- The character of BIC's business would make it resemble a passive sovereign wealth fund for the Government's banks.
- BIC was mooted in 2014 by the Reserve Bank of India's PJ Nayak Committee to review governance of boards of banks.
- As per the Committee's recommendations, the government set up a Bank Boards Bureau (in 2016) for selecting the top management of PSBs.

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India's GDP 2020-2021

- Gross Domestic Product (GDP) is the total value of all final goods and services produced within the country in one financial year.
- Ministry of Statistics and Programme Implementation released the First Advance Estimates (FAE) for the financial year 2020-2021.
- The key takeaways from the FAE 2020-21 is that India's GDP will contract by 7.7% in 2020-21.
- The MoSPI's FAE provides India's GDP, real GDP, per capita real GDP, Gross Value Added, Private Final Consumption Expenditure (PFCE), per capita PFCE, Gross Fixed Capital Formation (GFCF), etc.,

First Advance Estimates

- For any financial year, the MoSPI provides regular estimates of GDP.
- The first such instance is through the FAE. The FAE for any particular financial year is presented on 7th January.
- The FAE are arrived at before the end of the concerned financial year by extrapolating the available data.
- The MoSPI's approach for compiling the Advance Estimates is based on Benchmark-Indicator method.

Terminologies

- **Real GDP** is the GDP without the influence of inflation.
- **Gross Value Added** maps the value-added by different sectors of the economy such as agriculture, industry and services.
- In other words, GVA provides a proxy for the income earned by people involved in the various sectors.
- **Private Final Consumption Expenditure** includes all the things that a household would buy in their private individual capacity.
- PFCE constitutes over 56% of the total GDP.
- It is the biggest demand for goods and services comes from private individuals trying to satisfy their consumption needs.
- **Gross Fixed Capital Formation** is a type of demand that accounts for close to 28% of India's GDP.
- Taken together, private demand and business demand account for almost 85% of all GDP.

Pre-Packs

- The government may amend the Insolvency and Bankruptcy Code (IBC) to introduce pre-packs as a resolution mechanism.
- A pre-pack is an agreement for the debt resolution of a distressed company through an agreement between secured creditors and investors instead of a public bidding process.
- In India, such a system would require that financial creditors agree on terms with potential investors and seek approval of the resolution plan from the National Company Law Tribunal (NCLT).
- Pre-pack would act as an important alternative resolution mechanism to the Corporate Insolvency Resolution Process (CIRP) of the IBC.
- This process would be completed much faster than the traditional CIRP.
- [CIRP requires the creditors of the distressed company allow for an open auction for qualified investors to bid for the distressed company.]
- In 2020, the government formed a committee led by **MS Sahoo**, chairperson of the Insolvency and Bankruptcy Board of India, to look into including pre-packs as a resolution mechanism under the IBC.

Iron-Ore Policy 2021

- The Ministry of Railways has approved the new Iron-ore Policy 2021 governing the allocation of rakes and transportation of iron-ore.
- The provisions of the new policy will be updated in the rake allotment system module by the Centre for Railway Information Systems (CRIS).
- The scrutiny of documentation by Railways has been removed.

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- Executive Director Rake Movement of Railway Board (EDRM) office, Kolkata will have no regulatory role in the new policy.
- [EDRM Board office has been sanctioning programmes for movement of iron-ore traffic.]
- But, the office will be undertaking an analysis of various iron-ore traffic for further improvement of Railway freight loading.
- Customers desirous of moving their traffic under any priority will have to give an undertaking that they have procured, transported and utilized materials as per rules and regulations of Central and State Governments.
- For lapses, customers will be liable to be taken up as per the law of land and railway will stand indemnified for any such lapses.
- As per the new policy, higher priority will be given to the movement of iron-ore traffic for domestic manufacturing activity.
- The priority preferences for the customers will be self-generated by the system based on the customer's profile fed in the system by the concerning zone.

Section 32A of Insolvency and Bankruptcy Code

- The Supreme Court upheld the validity of Section 32 A of the Insolvency and Bankruptcy Code (IBC).
- [The protection to successful bidders and the assets of a corporate debtor are provided by the rules under Section 32A of the IBC.]
- It held that the successful bidders for a corporate debtor under the IBC would be immune from any investigations being conducted by investigating agencies or other statutory bodies.
- The court said that it was important for the IBC to attract bidders who would offer fair and reasonable value for the corporate debtor to ensure timely completion of Corporate Insolvency Resolution Process (CIRP).
- However, it also said that such immunity would be applicable only if there is an approved resolution plan, and a change in the management control of the corporate debtor.
- To know more about Insolvency and Bankruptcy Code, click here.

The Great Reset

- The Great Reset is an initiative by the World Economic Forum.
- It has been conceptualised by the founder and executive chairman of the WEF, Klaus Schwab, and has evolved over the last few years.
- It is based on the assessment that the world economy is in deep trouble.
- The current situation has been made worse by factors, like the effects of the pandemic on global society, the unfolding technological revolution, and the consequences of climate change.
- The world must act jointly to revamp all aspects of our societies and economies, from education to social contracts and working conditions.
- Every country must participate and every industry must be transformed.
- In short, there is a need for 'Great Reset' of capitalism.

Regulation of NBFCs

- The Reserve Bank of India (RBI) has created a **four-tier structure** for a tighter regulation of Non-Banking Financial Companies (NBFCs).
- The regulatory framework will be anchored on **proportionality**.
- The four-layered structure includes: Base Layer, Middle Layer, Upper Layer (will invite a new regulatory superstructure) and a possible Top Layer (is ideally supposed to be empty).
- The RBI has proposed classification of non-performing assets (NPAs) of base layer NBFCs from 180 days to 90 days overdue.

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- If an identified NBFC-Upper Layer does not meet the criteria for classification for four consecutive years, it will move out of the enhanced regulatory framework.

Changes in CSR Rules

- The Ministry of Corporate Affairs (MCA) has introduced below changes to the Corporate Social Responsibility (CSR) Rules,
    1. Mandating Impact Assessment for big CSR projects,
    2. Revamping the reporting formats of the Board report,
    3. Mandatory disclosure of all CSR projects and activities besides CSR Committee's composition on the company's website,
    4. Allow CSR activities to be carried through charitable trusts.
- Annual action plan for CSR has to be approved by the company Board.
- Besides new stipulations on the capital assets acquired through CSR funds, the amended Rules provide the transfer of the unspent amount to government notified fund.
- New norms have been introduced for carrying forward and set off of unspent CSR expenditure.
- All CSR projects must be registered from April 1 in new Form CSR-1.

EDISON Alliance

- The World Economic Forum (WEF) launched the Essential Digital Infrastructure and Services Network (EDISON) Alliance.
- This alliance will work towards ensuring global and equitable access to the digital economy.
- It will work with governments and industries to accelerate digital inclusion.
- Its goal is to ensure a cross-sectoral collaboration between the technology industry and other critical sectors of the economy.
- It will be steered by a multi-sector board.
- WEF will serve as the secretariat and platform for the Alliance.
- A group of 'Champions Leaders' will advise and support the Alliance.

20. ENVIRONMENT

Dzukou Forest Fire

- A forest fire occurred in Nagaland's Dzukou range, in which the Dzukou valley (a tourist hot spot) is located.
- This valley is located at the border of states of Nagaland and Manipur.
- It is a sanctuary for the endangered Blyth's tragopan - Nagaland's State Bird.
- It is famous for its wide range of flowers in every season. Rare Dzükou Lily is found only in this valley.
- This valley is 'Valley of flowers' of the Nagaland State.

Deepor Beel

- Kamrup district administration has prohibited community fishing at Deepor Beel - Assam's only Ramsar site.
- Deepor Beel is a permanent freshwater lake located to the south-west of Guwahati city.
- Lying in a former channel of the Brahmaputra river, it lies to the south of the main river channel.
- It was designated as a Ramsar site in 2002 for sustaining a range of aquatic life forms besides 219 species of birds.

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Bankapur Wolf Sanctuary

- Karnataka State Wildlife Board approved the formation of the first-ever 'Wolf Sanctuary' in the drylands of Bankapur of Koppal district.
- The region around Bankapur is interspersed with rocky hillocks and thorny vegetation.
- Besides Indian Grey wolves, the area can also help in the conservation of striped hyena, golden jackal, Indian fox and other fauna.
- **Indian Grey Wolf** is a subspecies of grey wolf that inhabits semi-arid and arid areas.
- It inhabits the dry grassland regions of Deccan Plateau in pockets and prey on blackbucks and other herbivores.
- It lacks the luxuriant winter coat as it lives in warmer conditions.
- It has a wide distribution range that extends from Southwest Asia to the Indian Subcontinent.
- International Union for Conservation of Nature Status - Least Concern
- Wildlife (Protection) Act of 1972 - Schedule I Part I.

Delhi Earthquakes

- As per the National Centre for Seismology (NCS), Delhi experienced 4 small earthquakes during April - August 2020.
- All these events were located by the National Seismological Network, being operated and maintained by NCS of the Ministry of Earth Sciences.
- Seismic network in Delhi and surroundings was strengthened by deploying 11 temporary additional stations covering the known faults in the region.
- This would precisely locate the earthquakes and their aftershocks for a better understanding of the causative sources
- [**Fault** - A fracture or discontinuity in a volume of rock.]
- Data from these stations are received in near real-time and used for locating the micro and small earthquakes in the region.
- The expanded network has now improved the accuracy of the epicenter location to ~2 km.
- A geophysical survey, namely, Magneto-telluric (MT) is also being conducted over the Delhi region.
- [**Magneto-telluric** (MT) - A geophysical method that uses natural time variation of the Earth's magnetic and electric fields to understand geological (underground) structure and processes.]
- These measurements are conducted across three major seismic sources, namely Mahendragarh-Dehradun Fault (MDF), Sohna Fault (SF) and Mathura Fault (MF).

Emissions from Grasslands

- A new study shows that emissions of methane (CH_4) and nitrous oxide (N_2O) from grasslands increased by a factor of 2.5 since 1750 mainly due to increased emissions from livestock.
- This has more than compensated for reduced emissions from the shrinking number of wild grazers.
- Net carbon sink effect of grasslands was estimated to have intensified over the last century but mainly in sparsely-grazed, natural grasslands.
- [Carbon Sink Effect is the ability of grasslands to absorb carbon and pack it in the soil.]
- Conversely, over the last decade, grasslands intensively managed by humans have become a net source of greenhouse gas emissions.
- It has greenhouse gas emission levels similar to those of global croplands, which represent a large source of greenhouse gases.

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Antarctic Ozone Hole

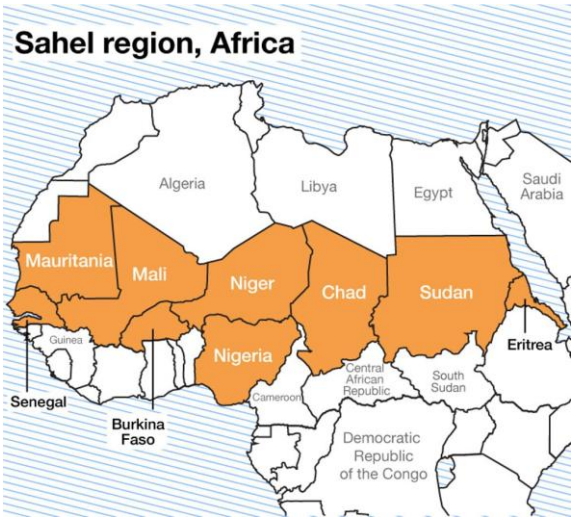
- One of the deepest, largest gap in the ozone layer-Antarctic ozone hole - has closed,according to World Meteorological Organization (WMO).
- The annually occurring ozone hole over the Antarctic had rapidly grown from mid-August and peaked in early October 2020.
- The expansion of the hole was driven by a strong, stable and cold polar vortex and very cold temperatures in the stratosphere.
- The same meteorological factors also contributed to the record 2020 Arctic ozone hole, which has also closed.
- [A polar vortex is a wide expanse of swirling cold air, a low pressure area, in Polar Regions.
- During winters, the polar vortex at the North Pole expands, sending cold air southward.
- An ozone hole is the thinning of the ozone layer boosted in size by colder temperatures.]
- As the temperatures high up in the stratosphere start to rise, ozone depletion slows, the polar vortex weakens and breaks down.
- By the end of December 2020, ozone levels return to normal. This time around, however, the process took longer.
- Human-made chemicals migrate into the stratosphere and accumulate inside the polar vortex.
- It begins to shrink in size as warmer temperatures dominate.
- The 2020 Antarctic hole was unprecedented as the polar vortex kept the temperature of the ozone layer cold, preventing the mixing of ozone depleted air above Antarctica with ozone rich air from higher latitudes.

Advisory on Human-Wildlife Conflict

- The Standing Committee of National Board of Wildlife (NBWL) has approved the advisory for management of Human-Wildlife Conflict (HWC) in the country.
- The advisory makes prescriptions for the States/Union Territories for dealing with HWC situations.
- It seeks expedited inter-departmental coordinated and effective actions.
- It envisages empowering gram panchayats in dealing with the problematic wild animals as per the WildLife (Protection) Act, 1972.
- It suggested that utilizing add-on coverage under the Pradhan Mantri Fasal Bima Yojna for crop compensation against crop damage due to HWC would, in turn, reduce HWC.
- To know more about the National Board for Wildlife, click here.

Great Green Wall

- Great Green Wall (GGW) initiative, launched by the African Union in 2007 had hit a wall due to funds crunch.
- It was conceived by 11 countries located along the southern border of the Sahara and their international partners.
- It was launched to address desertification, land degradation and climate change in the Sahel region.
- [Sahel region stretches from Senegal on the Atlantic coast, through parts of Mauritania, Mali, Burkina Faso, Niger, Nigeria, Gambia, Cameroon, Chad and Sudan to Eritrea on the Red Sea coast.]
- It aims to restore 100 million hectares of degraded land by 2030.



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- At the fourth One Planet Summit for Biodiversity co-organised by France, the United Nations and World Bank, France has announced $14 billion to scale up work of GGW.
- The GGW goals will also contribute to the UN-mandated Sustainable Development Goal 15 (SDG 15) - Life on land.
- [SDG 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and biodiversity loss]
- **PROGREEN** is a World Bank fund dedicated to boosting countries' efforts to address landscape degradation.
- It will also invest $14.5 million in five countries in the Sahel region: Burkina Faso, Chad, Niger, Mali and Mauritania.

Flash Droughts

- Flash droughts are those that occur very quickly, with soil moisture depleting rapidly.
- Normally, developing drought conditions take months, but these happen within a week or in two weeks' time.
- Several factors including atmospheric anomalies, anthropogenic greenhouse gas emissions play an important role.
- In 1979, India faced a severe flash drought, affecting about 40% of the country and taking a toll on agriculture.
- A new study has now pointed out that India could experience more such flash droughts by the end of this century.

Elephant Corridor Case

- The Supreme Court appointed a conservationist as a Member of Technical Committee of the National Elephant 2 Action Plan.
- This three-member Committee was constituted for looking into the Elephant Corridor Case.
- It hears complaints by land owners against the action taken by the Nilgris Collector, which included allegations about arbitrary variance in acreage of the elephant corridor.
- The Supreme Court upheld Tamil Nadu government's authority to notify an 'elephant corridor' and protect the migratory path of the animals through the Nilgiri biosphere reserve.
- The corridor is situated in the Sigur plateau and sustains elephant (Keystone species) populations and their genetic diversity.
- The elephants cross the plateau in search of food and water.
- **Sigur plateau** connects the Western and the Eastern Ghats.
- It has the Nilgiri Hills on its south western side and the Moyar River Valley on its north-eastern side.
- **Keystone species** is a plant or animal that plays a unique role in the way an ecosystem functions.
- Without them, the ecosystem would be dramatically different or cease to exist altogether.
- Its disappearance could affect other species that rely on it for survival. To know more, click here.

SPECIES IN NEWS

Woolly Rhino

- A well-preserved Ice Age woolly rhino has been recovered from permafrost in Russia's extreme north.
- The carcass has most of its soft tissues still intact, including part of the intestines, thick hair and a lump of fat. Its horn was found next to it.
- It is dated to be anywhere from 20,000- to 50,000-years-old.

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- It was found on the Tirekhtyakh river bank, close to the area where another young woolly rhino (Sasha) was recovered in 2014.
- Recent years have seen major discoveries of mammoths, woolly rhinos, Ice Age foal, and cave lion cubs as the permafrost increasingly melts across vast areas of Siberia because of global warming.

Kolar Leaf-Nosed Bat

- Karnataka Forest Department, along with the Bat Conservation India Trust (BCIT), is on a war footing to save these bats from extinction.
- The natural habitats of these bats are subtropical or tropical dry forests and caves.
- It is **endemic to India** and is found in only one cave in Karnataka.
- The International Union for Conservation of Nature (IUCN) status of this species is **Critically Endangered**.

Caracal

- It is a medium size wild cat found in parts of Rajasthan and Gujarat.
- It has been included into the list of critically endangered species by the Standing Committee of National Board of Wildlife (NBWL).
- Now, it will be conserved with financial support under the centrally sponsored Scheme - Development of Wildlife Habitat.
- International Union for Conservation of Nature (IUCN) status - Least Concern.
- Their survival in India is endangered due to the rapid loss of scrub and thorn habitat and unchecked human activates in the caracals habitat.

21. SCIENCE AND TECHNOLOGY

SPACE

Diamond-studded Meteorite

- A US study has analysed the diamond-studded meteorite that exploded over Sudan in 2008.
- The meteorite was part of a giant asteroid in our solar system, which was the same size as the dwarf planet Ceres.
- [Ceres is the largest celestial object in the asteroid belt.]
- It had a unique mineral makeup, including ‘amphibole’ which requires prolonged exposure to water in order to develop.
- This mineral appeared only once on Allende meteorite that fell in Mexico.
- The meteorite belongs to the category of 4.6% of meteorites that have been found on Earth, which are known as Almahata Sitta (AhS).
- These black rocks are made of a material called carbonaceous chondrite.
- They contain organic compounds and a variety of minerals, and water.

SolarWinds Hack

- It is a cyber attack, which was first discovered by the US cyber security company FireEye.
- Named as Campaign UNC2452, this attack had targeted various public and private organisations around the world.
- It has emerged as one of the biggest ever targeted against the US government, its agencies and several other private companies.

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- The kind of attack on the US government agencies and companies is called a 'Supply Chain' attack.
- This means that instead of directly attacking the federal government or a private organisation's network, the hackers target a third-party vendor, which supplies software to them.
- In this case, the target was an IT management software called Orion, supplied by the Texas-based company SolarWinds.

Polar Vortex

- A spike in temperatures, high in the atmosphere above the North Pole, may soon send bone-rattling chills across the Northern Hemisphere.
- These icy blasts are from the same weather pattern that triggered the 2014 cold snap known as the polar vortex.
- Technically, the polar vortex refers to a band of low pressure and cold air that encircle the Arctic and keep the cold **locked far to the North**.
- But with that temperature spike (i.e. sudden stratospheric warming), the band can buckle, allowing frigid air to head south. It is called "polar pig".
- To know more about Polar Vortex, click here.

Stratospheric Warming

- Sudden stratospheric warming (SSW) event took place January 5, 2021.
- This would be the reason behind the very cold weather in large parts of the world.
- It was potentially the most dangerous kind, where the polar vortex split into two smaller 'child' vortices.
- [The polar vortex is a large area of low pressure and cold air surrounding both of the Earth's poles. To know more, click here.]
- Researchers from the Universities of Bristol, Exeter, and Bath have come up with a new way to predict the knock-on effects of various changes to this major air current high up in the stratosphere.
- During an SSW, polar stratospheric temperature can increase by up to 50 degrees Celsius over the course of a few days.
- Such events are often followed by very cold weather.
- The last time an SSW event took place was 'Beast from the East 2018'.

Asteroids Approaching Earth

- National Aeronautics and Space Administration (NASA) has cautioned about six asteroidsthat will zoom past Earth.
- The six asteroids are 2021 AC, 2016 CO247, 2021 AJ (smallest of the six asteroids),2018 KP1, 2021 AU and 2008 AF4 (largest of the six).
- As per NASA, none of the asteroids going past the Earth poses a threat.
- Only Near-Earth Objects (NEOs) pose a threat to Earth and that also depends on the size as the celestial objects burn upon entering the atmosphere.
- Most of them are blow to small pieces before hitting the ground.

Heliophysics Missions

- NASA has approved two heliophysics missions to explore the Sun and the system that drives space weather near Earth.
- Understanding the physics that drive the solar wind and solar explosions could help in predicting these events.
- Together, NASA's contribution to the following will help in understanding the Sun and Earth as an interconnected system,

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1. Extreme Ultraviolet High-Throughput Spectroscopic Telescope Epsilon Mission (EUVST) and
2. Electrojet Zeeman Imaging Explorer (EZIE)

NGC 2808

- Indian Institute of Astrophysics (IIA) has spotted rare hot UV-bright stars in the massive globular cluster NGC 2808 of our Milky Way Galaxy.
- [IIA is an autonomous institute of the Department of Science & Technology, Government of India]
- NGC 2808 is said to have at least five generations of stars, which exist in the late stages of evolution of a Sun-like star.
- Old globular clusters, referred to as dinosaurs of the Universe, help to understand how stars evolve through various phases between their birth and death.
- UV-bright stars have been distinguished from the relatively cooler main-sequence stars using images from Ultraviolet Imaging Telescope (UVIT) onboard satellite AstroSat.
- [AstroSat is India's first multi-wavelength space satellite. To know more about AstroSat, click here.
- IIA combined the UVIT data with observations made using other space missions along with ground-based optical observations.
- From the data, the properties of the stars of this cluster such as their surface temperatures, luminosities and radii were derived.
- The properties of these stars were then used to place them on what the Hertzsprung-Russel (HR) diagram along with theoretical models.

Saturn's Obliquity

- Obliquity of a planet is the angle between its equatorial plane and the orbital plane, i.e the tilt of a planet.
- During Saturn's formation, its obliquity was 26.7°. But recent observations have shown that it has increased to 27°.
- This tilt may have been caused due to its satellites, which are moving away much faster than what was estimated before.

DEFENCE

Project 17A

- Himgiri, the first of the three Project 17A ships built at Garden Reach Shipbuilders and Engineers Limited (GRSE), has been launched.
- P17A ships are the first gas turbine propulsion and largest combat platforms ever built at GRSE.
- Project 17A or Nilgiri-class frigate is follow-on of the Project 17 Shivalik-class stealth frigate for the Indian Navy.
- A total of seven P17A ships are being built using integrated construction methodology at Mazagon Dock and GRSE.
- P17A frigates integrate new design concepts for improved survivability, sea keeping, stealth, ship manoeuvrability, advanced indigenous weapon and sensor fit along with other improvements.

Joint Venture Protective Carbine

- It is a Gas Operated Semi Bull-pup automatic weapon, which will replace the 9 mm carbine currently in use by the armed forces.

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- It is jointly developed by the Defence Research and Development Organisation's Armament Research and Development Establishment (ARDE) and Ordnance Factory Board (OFB).
- It has more than 700 rpm rate of fire and the effective range of the carbine is more than 100 m.
- It weighs about 3.0 kg with key features like high reliability, low recoil, retractable Butt, ergonomic design, single hand firing capability, and multiple Picatinny rails etc.
- These features make it a very potent weapon for Counter Insurgency and Counter Terrorism operations by security agencies.

Asmi

- Asmi (means pride, self respect and hard work) is India's first indigenously developed 9-mm machine pistol.
- [Machine pistols are primarily self-loading versions of pistols which are either fully automatic or can also fire bursts of bullets.]
- Asmi is jointly developed by ARDE and Indian Army's Infantry School.
- It has an upper receiver made from aircraft-grade aluminum and lower receiver from carbon fibre.
- The 3D printing technology has been used in designing and prototyping of the pistol, including trigger components made by metal 3D printing.
- The weapon has huge potential in armed forces as a personal weapon for heavy weapon detachments, commanders, counter-insurgency and counter-terrorism operations etc.

Smart Anti Airfield Weapon

- Defence Research and Development Organisation (DRDO) successfully test fired Smart Anti-Airfield Weapon (SAAW).
- SAAW is indigenously designed and developed by DRDO's Research Centre Imarat (RCI) Hyderabad.
- It is a high precision guided bomb that is light weight as compared to weapon system of the same class.
- This 125 Kg class smart weapon is capable of engaging ground enemy airfield assets up to a range of 100 kms.

Akash-NG Missile

- Defence Research and Development Organisation (DRDO) conducted the successful launch of Akash-NG (New Generation) Missile.
- Akash-NG is a new generation **Surface to Air Missile** meant for use by Indian Air Force.
- It aims at intercepting high maneuvering low RCS aerial threats.
- It has a Command and Control system, onboard avionics and aerodynamic configuration.
- It has been developed with better deployability compared to other similar systems with canisterized launcher and much smaller ground system footprint.
- The Multi Function Radar was tested for its capability of integration with the Akash-NG system.

HEALTH

Limiting TFA

- Food Safety and Standards Authority of India (FSSAI) has capped the amount of Trans Fatty Acids (TFA) in oils and fats to 3% for 2021 and 2% by 2022 from the current permissible limit of 5%.
- This was done through an amendment to the Food Safety and Standards (Prohibition and Restriction on Sales) Regulations.
- This revised regulation applies to edible refined oils, vanaspati (partially hydrogenated oils), margarine, bakery shortenings, and other media of cooking such as vegetable fat spreads and mixed fat spreads.

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- It was in 2011 that India first passed a regulation that set a TFA limit of 10% in oils and fats, which was further reduced to 5% in 2015.
- Trans fats are associated with increased risk of coronary heart disease.
- The World Health Organisation (WHO) has called for global elimination of trans fats by 2023. Based on this, FSSAI revised the regulations.

Bird Flu

- The mysterious deaths of thousands of birds, across species, in several parts of India have prompted concerns about bird flu.
- Bird flu or Avian influenza is a disease caused by infection with avian flu Type A viruses.
- These viruses are found naturally in wild aquatic birds around the world and can infect domestic poultry as well as other bird and animal species.
- Based on their molecular characteristics and potency, these viruses are divided into,
    1. Low pathogenic avian influenza (LPAI) A viruses - Causes mild or no disease, and
    2. Highly pathogenic avian influenza (HPAI) A viruses - Causes severe infection that leads to high mortality.
- Avian influenza A viruses can infect birds through contact with infected wild birds or other infected poultry, as well as surface contamination.
- Human infections, though rare, happen when sufficient quantity of bird flu virus enters a person's nose, eyes or mouth, or through inhalation.

Culling

- It is the mass slaughter of domestic poultry birds to contain the spread of bird flu.
- During culling operations, all domestic birds in an infected area are slaughtered and their remains buried.
- In India, culling is done in a radius one kilometre from the site of infection, which is called the 'infected zone'.
- Cervical dislocation or neck-wringing method is to be used for culling.
- Culling was earlier done only to stop the viral disease from spreading to birds in other farms outside the infected zone.
- It is now aimed at protecting humans, ever since the first transmission to humans in 1997.

Nanobodies

- The University of Bonn has developed novel antibody fragments (nanobodies) against SARS-CoV-2.
- Nanobodies are antibody fragments that are so simple that they can be produced by bacteria or yeast, which is less expensive.
- They are recombinant, antigen-specific and have a single variable domain on a heavy chain, called VHH domains. They lack VL domains.
- They are much smaller than classic antibodies. So, they penetrate the tissue better and can be produced more easily in larger quantities.
- The nanobodies have been combined into potentially effective molecules, which attack different parts of the virus simultaneously.

OTHERS

Quantum Random Number Generator

- It was developed by Defence Research and Development Organisation Young Scientist Laboratory for Quantum Technologies (DYSL-QT).
- It has the ability to detect random quantum events and convert them into a stream of binary digits.
- DYSL-QT has developed a fiber-optic branch path based Quantum Random Number Generator (QRNG).
- Branch path-based QRNG relies on the principle that if a single photon falls on a balanced beam splitter, it will take either of the beam-splitter output paths randomly.

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- As the path chosen by the photon is random, the randomness is translated to a sequence of binary digits, also called bits.
- As Quantum mechanics has the potential of providing true random numbers, it has become the preferred option for scientific applications requiring randomness.

QKD Technology

- Quantum Key Distribution (QKD) technology of the DRDO underwent a successful trial between two laboratories in Hyderabad, where security was validated for a range of 12 km long over a fibre optic channel.
- QKD is primarily a mechanism to undertake secure communication, which utilises a cryptographic protocol involving various components of quantum mechanics.
- It enables two communicating sides to come up with random secret keys shared by both of them and known exclusively to them.
- Only they can use it to encrypt and decrypt messages, thus achieving highly secure communication.

Saguna Rice Technique

- The Saguna Rice Technique (SRT) technique will help stop the stubble burning in Punjab and Haryana.
- This **zerotill** technique is a unique **Conservation Agriculture** (CA) type of cultivation method.
- This method is used to cultivate rice and related rotation crops without ploughing, puddling and transplanting rice on permanent raised beds.
- The **SRT iron forma** tool facilitates planting of crop in predetermined distances enabling precise plant population per unit area.
- The important principles are:
    1. SRT insists that all roots and small portion of stem should be left in the beds for slow rotting.
    2. No ploughing, puddling and hoeing to be done to control weeds.
    3. SRT will get the crop ready for harvesting 8 to 10 days earlier.
    4. Take this into consideration while choosing a variety to avoid getting harvesting caught in receding rain.

5G

- Department of Telecommunications (DoT) has sought inputs on sale and use of radio frequency spectrum over next 10 years, including 5G bands.
- 5G or fifth generation is the latest upgrade in the long-term evolution (LTE) mobile broadband networks.
- 5G works in 3 bands, namely low, mid and high frequency spectrum.
- **Low band spectrum** shows promise in terms of coverage and speed of internet and data exchange, but the maximum speed is limited to 100 Mbps (Megabits per second).
- It can be used and installed for commercial cell phone users who may not have specific demands for very high speed internet, but it may not be optimal for specialised industrial needs.
- **Mid-band spectrum** offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals.
- It may be used for specialised industrial needs.
- **High-band spectrum** offers the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength.
- Internet speeds in the 5G spectrum has been tested to be as high as 20 Gbps (giga bits per second), while in 4G it is at 1 Gbps.

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Nanofibers

- Researchers at Massachusetts Institute of Technology have constructed small molecules which when added with water form nanofibers.
- These hard and rigid molecules become so tough that they it can hold about 200 times their own weight.
- Nanofibers are fibers with diameters in the nanometer range.
- They can be generated from different polymers and hence have different physical properties and application potentials.
- The diameters of nanofibers depend on the type of polymer used and the method of production.

22. INDEX AND REPORT

Report on Lightning Strikes

- Lightning strikes have caused 1,771 deaths between April 1, 2019 and March 31, 2020, according to a report on lightning incidents in India.
- This report has been prepared by Climate Resilient Observing Systems Promotion Council (CROPC).
- [CROPC is a non-profit organisation that works to disseminate early lightning forecasts.]
- Uttar Pradesh, Madhya Pradesh, Bihar, Odisha and Jharkhand together accounted for more than 60% of the deaths.
- A large number of deaths occur as not much awareness has been undertaken.
- As per the report, the Government of India and most states have not notified lightning as a disaster.

Lightning

- Lightning is the process of occurrence of a natural electrical discharge of very short duration and high voltage between a cloud and the ground or within a cloud.
- This would be accompanied by a bright flash and sound, and sometimes thunderstorms.
- Inter cloud or intra cloud (IC) lightning are visible and harmless.
- Cloud to ground (CG) lightning is harmful as the 'high electric voltage and electric current' leads to electrocution.

Digital Payments Index

- The Reserve Bank of India has constructed a Digital Payments Index (DPI) to capture the extent of digitisation of payments across India.
- The RBI-DPI comprises of 5 broad parameters that enable measurement of deepening and penetration of digital payments in the country over different time periods. These parameters are –
    1. Payment Enablers (weight 25%),
    2. Payment Infrastructure – Demand-side factors (10%),
    3. Payment Infrastructure – Supply-side factors (15%),
    4. Payment Performance (45%) and
    5. Consumer Centricity (5%).
- Each of these parameters has sub-parameters which consist of various measurable indicators.
- The RBI-DPI has been constructed with March 2018 as the base period, i.e. DPI score for March 2018 is set at 100.

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Longitudinal Ageing Study of India

- Health Minister released India report on Longitudinal Ageing Study of India (LASI) Wave-1 on the virtual platform.
- LASI is a full-scale national survey of scientific investigation of the **health, economic, and social** determinants and consequences of population ageing in India.
- This report will provide a base for national and state level programmes and policies for elderly population.
- The LASIhas been undertaken by the National Programme for Health Care of Elderly, Ministry of Health and Family Welfare.
- Wave - 1 covered a baseline sample of over 72,000 individuals aged 45 and above and their spouses.
- This sample includes elderly persons aged 60 and above and oldest-old persons aged 75 and above from all States and Union Territories of the country excluding Sikkim.

'Indian Cities in Post-Pandemic World' Report

- This report was carried out by the World Economic Forum (WEF).
- It highlights the country's most pressing urban challenges that were further exacerbated by the COVID-19 pandemic.
- It said that the unfolding pandemic has been catastrophic for cities.
- But these cities will also be a key to India's post-pandemic growth as they account for nearly 70% of India's GDP.
- The study found that an average of 25-30 people migrate to cities from rural areas every single minute.
- However, most big cities in India have a wide economic disparity, with expansive slums and a large urban poor population.
- The study further said that about 35% per cent of all urban households cannot afford housing at market prices.

Adaptation Gap Report 2020

- It was released by the United Nations Environment Programme (UNEP).
- The report informs national and international efforts to advance climate change adaptation. It has two parts,
    1. Recurrent assessment of global progress on adaptation in three areas: planning, financing and implementation.
    2. Deeper assessment of the status of adaptation within a particular sector or theme, but still framed around the above three elements (This year, the theme is Nature-based Solutions).
- The report has found that the annual cost of adaptation to the effects of climate change for developing countries would quadruple by 2050.
- The report has found that there are huge gaps in finance for developing countries and in adaptation projects to the stage where they bring real protection against climate impacts such as droughts, sea-level rise, etc.
- UNEP called for a drastic scale-up of public and private finance for adaptation, and increased investment in Nature-based Solutions.
- Adaptation - reducing the fallout among communities and increasing their capacity to deal with climate-related disasters such as floods and drought - is a pillar of the 2015 Paris accord.
- **Adaptation cost** includes costs of planning, preparing for, facilitating and implementing adaptation measures.
- The adaptation cost has also outpaced the growth in adaptation finance and that is the reason for a maintained Adaptation Finance gap.
- **Adaptation Finance** refers to the flow of funds to developing countries to help them tide over the damages caused by weather events from climate change.
- **Adaptation Finance Gap** is the difference between Adaptation Cost and Adaptation Finance.

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- Adaptation costs are higher in developed countries but the burden of adaptation is greater for developing countries in relation to their gross domestic product (GDP).

International Migration Report 2020

- This United Nations report has found that the global migration has slowed down by nearly 30%, owing to restrictions that were put in place to contain the ongoing coronavirus pandemic.
- The report found that two million fewer people migrated between 2019-20 than expected.
- The report showed how two-thirds of registered migrants lived in less than 20 countries.
- The United States topped the list, hosting 51 million migrants in 2020.
- The most number of migrants lived in Europe in 2020.
- In terms of the largest Diasporas in 2020, India topped the list. 18 million Indians were living outside their country of birth in 2020.
- In 2020, women and girls comprised 48% of all international migrants, and refugees accounted for 12% of international migrants.

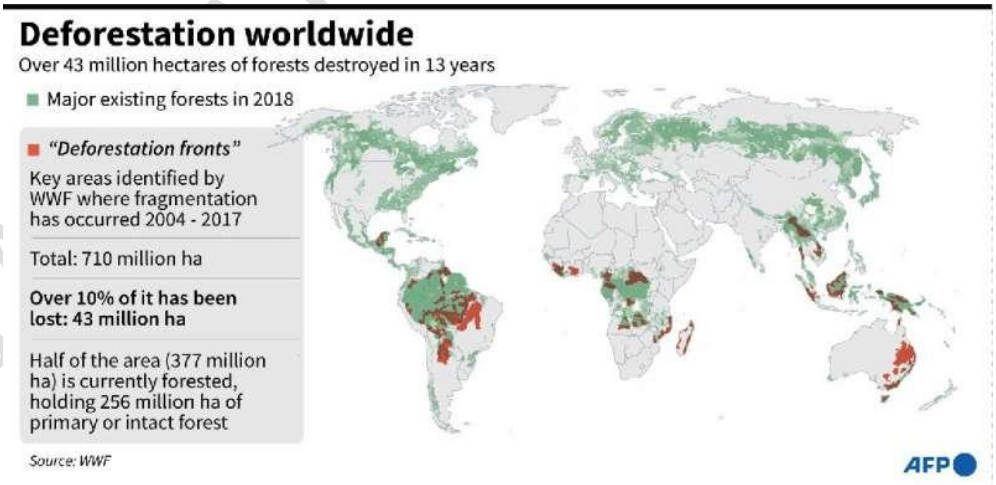
Financial Stability Report

- This report was released by the Reserve Bank of India (RBI).
- The stress tests show that the Gross Non-Performing Assets (GNPA) ratio of banks may increase from 7.5% in September 2020 to 13.5% by September 2021 under the baseline scenario.
- If the macroeconomic environment worsens into a severe stress scenario, the GNPA ratio may escalate to 14.8%.

WWF Report

- WWF said that more than 43 million hectares of forest have been lost in a little over a decade in just a handful of deforestation hotspots.
- It found that just 29 sites across South America, Africa and South East Asia were responsible for more than half of the global forest loss.

World's forests in 2018


Deforestation worldwide
Over 43 million hectares of forests destroyed in 13 years
Major existing forests in 2018
"Deforestation fronts"
Key areas identified by WWF where fragmentation has occurred 2004 - 2017
Total: 710 million ha
Over 10% of it has been lost: 43 million ha
Half of the area (377 million ha) is currently forested, holding 256 million ha of primary or intact forest
Source: WWF
AFP

- Swathes of forest continue to be flattened each year (mainly due to industrial-scale agriculture) as biodiversity-rich areas are cleared to create space for livestock and crops.
- Brazilian Amazon and Cerrado, Bolivian Amazon, Paraguay, Argentina, Madagascar, along with Sumatra and Borneo in Indonesia and Malaysia were among the worst affected.
- As wild species find their living space shrinking further each year, the risk of a repeat of zoonotic diseases jumping to humans is ever higher.

- The report urged citizens to do their bit by avoiding products linked to deforestation such as some meat, soy and palm oil products.
- It also urged governments to work to secure the rights of indigenous peoples and conserve biodiversity-rich areas.

Indian Telecom Services Performance Indicator Report

- This report was released by the Telecom Regulatory Authority of India (TRAI), a statutory authority under Department of Telecommunications, Ministry of Communications.
- It provides a broad perspective of the Telecom Services in India.
- This quarterly report presents the key parameters and growth trends of the Telecom Services as well as Cable TV, DTH & Radio Broadcasting services in India.
- It is compiled mainly based on the information furnished by the Service Providers.

India Innovation Index Report 2020

- Initiated by NITI Aayog in 2019, this report is on the lines of the Global Innovation Index (GII), which ranks countries annually.
- The indicators include the level and quality of education, number of highly skilled professionals, investment in R&D, FDI inflows, internet subscribers, number of patents and trademark applications filed, etc.,
- Innovation Index is divided in to three categories—major states, Union Territories, and hill and North East states.
    1. Karnataka is ranked the most innovative among major states.
    2. Delhi topped the category among Union Territories.
    3. Delhi stood out as the top performer among both states and UTs.
    4. Amongst North East and hill states, Himachal Pradesh topped.
- The findings of the report pointed out that there is a North-South divide, with the southern states having fared much better.

Management Effectiveness Evaluation

- Management Effectiveness Evaluation (MEE) of 146 national parks and wildlife sanctuaries across 29 states and Union territories was done by the Ministry of Environment, Forest and Climate Change.
- Tirthan Wildlife Sanctuary and Great Himalayan National Park (GHNP) in Himachal Pradesh have performed the best among the surveyed protected areas.
- The Turtle Wildlife Sanctuary in Uttar Pradesh was the worst performer.

Protected Areas

- India has systematically designated its Protected Areas in four legal categories under the Wildlife (Protection) Act, 1972.
- Four categories are National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves.
- India has a network of 903 formally designated Protected Areas covering about 5% of its total geographic area of the country.
- Among these are 101 National Parks, 553 Wildlife Sanctuaries, 86 Conservation Reserves and 163 Community Reserves.

World Economic Situation and Prospects 2021

- The World Economic Situation and Prospects 2021 was released by the United Nations Department of Economic and Social Affairs (UN DESA).
- It said that the world economy was hit by a once-in-a-century crisis a Great Disruption unleashed by the Covid-19 pandemic in 2020.
- India's economy is projected to grow at 7.3% in 2021.
- The global economy shrank by 4.3% in 2020, over two-and-a-half times more than during the global financial crisis of 2009.

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- The modest recovery of 4.7% expected in 2021 would barely offset the losses of 2020.

Corruption Perception Index 2020

- Transparency International (TI) has released the Corruption Perception Index (CPI) for 2020.
- India's rank has slipped six places to 86th among 180 countries.
- The CPI score for India is 40, which is almost constant this year as well as the previous year score.
- The index ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and business people.
- It uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. A country with a higher score has a higher rank.

World Economic Outlook

- The International Monetary Fund (IMF) has released its World Economic Outlook report for January 2021.
- It had projected a growth rate of 11.5% for India's economy in 2021.
- This report suggests that India will be the only major economy to register a double-digit growth this year, followed by China.
- Earlier, a separate report released by the UN Department of Economic and Social Affairs, estimated India's economy contract by 9.6% in 2020, while it is projected to grow at 7.3% in 2021.

PRELIMS PRACTICE QUESTIONS

1. Consider the following statements with respect to Light Amplification by Stimulated Emission of Radiation Dazlers (Laser Dazzlers)
   1. It is a lethal method of warning and stopping suspicious vessels and aircrafts from approaching secured areas.
   2. It is capable of dazzle during both day and night.
   3. The technology was developed by the Defence Research and Development Organisation (DRDO).

Which of the statement(s) given above is/are correct?

a) 2 only
b) 1 and 3 only
c) 2 and 3 only
d) None of the above

2. *R P Tiwari Committee*, sometimes seen in the news recently was constituted by?

a) Reserve Bank of India
b) Ministry of Tribal Affairs
c) University Grants Commission
d) Ministry of Environment, Forest and Climate Change

3. Which of the following statements are correct with respect to *International Organization of Securities Commissions (IOSCO)*
   1. It is intergovernmental organization that works closely with G7 nations.
   2. It brings the world's securities regulators together, and acts as a global standard setter for the securities sector.

Select the correct answer using the codes given below:

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a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

4. Which of the following statements are *incorrect* with respect to *Digital Payment Index (DPI)*
   1. It aims to reflect accurately the penetration and deepening of various digital payment modes.
   2. It is constructed by NITI Aayog with March 2018 as the base period.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

5. Consider the following statements with respect to *Non-Nuclear Aggression Agreement*
   1. It allows exchanging list of nuclear installations between India and China that prohibits them from attacking each other's atomic facilities.
   2. Nuclear installation under the agreement includes only nuclear power plants, Research reactors and Nuclear weapon facilities.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

6. Which of the following statements are *incorrect* with respect to *SukanyaSamriddhiYojana*
   1. Under this scheme a savings account can be opened by legal guardians of the girl child below 14 years of age.
   2. The account holder can only withdraw 50% of the accumulated amount and use it only for the purpose of higher education.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

7. Which of the following are the operational research base stations in Antarctica established under the *Indian Antarctic programme*?
   1. Maitri
   2. Bharati
   3. Himadri
   4. DakshinGangotri

Select the correct answer using the codes given below:

a) 1 and 2 only

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b) 3 and 4 only
c) 1, 2 and 3 only
d) 1, 3 and 4 only

8. Which of the following statements are *incorrect* with respect to *Kolar Leaf-Nosed Bat*
   1. It is endemic to India and found in only in the Kolar district of Karnataka.
   2. It is currently evaluated as vulnerable by the IUCN.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

9. *Vienna Accord of 2015* refers to which of the following?

a) Convention on Road Traffic
b) Convention on Consular Relations
c) Convention for the Protection of the Ozone Layer
d) Joint Comprehensive Plan of Action on the Nuclear Program of Iran

10. Consider the following statements with respect to *Edible Mushrooms*
    1. The anti-oxidant compounds in Mushrooms provide cancer fighting abilities.
    2. Union government has advised state governments to include Mushroom in mid-day meals scheme

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

11. Consider the following statements with respect to *Uranium Enrichment*
    1. It is done by increasing the percentage of uranium-235 to create an effective nuclear fuel.
    2. The enrichment process requires the uranium to be in gaseous form.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

12. Consider the following statements with respect to India Report on Longitudinal Ageing Study of India (LASI)
    1. It is a full–scale national survey of scientific investigation of the health, economic, and social determinants and consequences of population ageing in India.
    2. The study was undertaken by National Programme for Health Care of Elderly, Ministry of Health.

Which of the statement(s) given above is/are correct?

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a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

13. Consider the following statements with respect to *Goldilocks Zone*

1. It refers to a habitable zone around a star, where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets.
2. Earth is in the Sun's Goldilocks zone.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

14. Consider the following statements with respect to *Caracal*

1. It is a medium size wild cat found in some parts of Assam and Arunachal Pradesh.
2. The standing committee of National Board of Wildlife (SC-NBWL) has recently approved the inclusion of caracal into the list of critically endangered species.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

15. Consider the following statements with respect to *Vertical and Horizontal Reservations*

1. Reservation for Scheduled Castes, Scheduled Tribes, and Other Backward Classes is referred to as horizontal reservation.
2. Vertical reservation refers to the equal opportunity provided to other categories of beneficiaries such as women, veterans, PWD, transgender, etc.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

16. Which of the following statements are correct with respect to *Magneto-Telluric (MT) method*

1. It is an electromagnetic geophysical method for inferring the earth's subsurface electrical conductivity.
2. It will ascertain the presence of fluid, which generally enhances the possibility of triggering of earthquakes.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2

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d) Neither 1 nor 2

17. Under the *Scheme for Special Assistance to States for Capital Expenditure*, financial assistance will be provided to states that carry out three out of four reforms. Which of the following reforms are mentioned under the scheme?

1. Power sector
2. Urban Local Body
3. Ease of Doing Business
4. One Nation One Ration Card

Select the correct answer using the codes given below:

a) 1 and 3 only
b) 2 and 4 only
c) 1, 2 and 3 only
d) 1, 2, 3 and 4

18. Which of the following statements are correct with respect to *Basaveshwara*

1. He is the founder of Lingayatism, a shaivitehindu religious tradition.
2. He established the religious parliament called AnubhavaMantapa.
3. The followers of Basavanna led a reform movement through Vachana literature.

Select the correct answer using the codes given below:

a) 1 only
b) 2&3 only
c) 1&3 only
d) All of the above

19. Consider the following statements with respect to *Blue economy*

1. It consists of economic activities dependent on marine resources, which comprises 35% of India's GDP.
2. PM-MastyaSampadaYojana aims at enhancing fish production by an additional 70 lakh tonne by 2024-25.

Which of the statement(s) given above is/are *incorrect*?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

20. Which of the following statements are correct with respect to *Payment Infrastructure Development Fund*

1. The fund will be managed by an expert council with Finance secretary as its head.
2. It will be utilised to develop payment acceptance infrastructure, with a special focus on the north-eastern states of the country.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

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21. With respect to *NCAVES Project*, consider the following statements:
    1. The project is being funded by the European Union (EU).
    2. It has been jointly implemented by the United Nations Statistics Division (UNSD), the United Nations Environment Programme (UNEP) and the Secretariat of the Convention of Biological Diversity (CBD).
    3. India is one of the five countries taking part in this project.

Which of the statements given above are correct?

a) 1 and 2 only
b) 1 and 3 only
c) 2 and 3 only
d) 1, 2 and 3

22. *System of Environmental-Economic Accounting (SEEA) Framework* is an accepted international standard for environmental-economic accounting. It provides information on which of the following areas?
    1. Land Accounts
    2. Energy Accounts
    3. Material Flow Accounts
    4. Air Emissions Accounts
    5. Agriculture, Forests, and Fisheries Accounts

Select the correct answer using the codes given below:

a) All except 5
b) All except 1 and 2
c) All except 3 and 4
d) All of the above

23. With respect to *Trade Policy Review Mechanism (TPRM)*, consider the following statements:
    1. It is an important mechanism under the World Trade Organization's (WTOs) monitoring function.
    2. The review facilitates smooth functioning of the multilateral trading system by enhancing transparency of Members' trade policies.
    3. All WTO Members are subject to review under the Trade Policy Review Mechanism (TPRM).

Which of the statement(s) given above is/are correct?

a) 2 only
b) 1 and 2 only
c) 2 and 3 only
d) 1, 2 and 3

24. Consider the following statements with respect to *Digital Services Tax*
    1. It is a Value Added Tax on digital services where the consumer bears the entire tax burden on the value of the final product.
    2. It is adopted by India, Italy and Turkey which discriminate against U.S. companies.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only

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c) Both 1 and 2
d) Neither 1 nor 2

25. Consider the following statements with respect to *Vanadium*

1. It is a high-value metal used in the manufacture of partially hydrogenated oils or Trans fats.
2. India is a significant consumer of vanadium, but is not a primary producer of the strategic metal.
3. It is recovered as a by-product from the slag collected from the processing of vanadiferous magnetite ores.

Which of the statements given above are correct?

a) 1 and 2 only
b) 1 and 3 only
c) 2 and 3 only
d) None of the above

26. Consider the following statements with respect to *V Shaped Recovery in Economics*

1. It is characterized by a quick and sustained recovery in measures of economic performance after a sharp economic decline.
2. It suggests that economic spending and employment will rapidly decline, but quickly pick back up.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

27. Which of the following statements are *incorrect* with respect to *Magnetotail*

1. It is elongated extension of the Earth's magnetosphere on the side facing away from the Sun.
2. Earth's magneto tail extends well beyond the orbit of the moon and, once a month, the moon orbits through it.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

28. Consider the following statements with respect to *KhadiPrakritik Paint*

1. The paint uses heavy metals like lead, mercury, arsenic and cadmium to make it eco-friendly and non-toxic.
2. It is a first of its kind paint developed by Khadi and Village Industries Commission (KVIC).
3. The paint is based on cow dung and has been certified by the Bureau of Indian Standards.

Which of the statement(s) given above is/are correct?

a) 2 only
b) 1 and 3 only
c) 2 and 3 only
d) None of the above

29. Consider the following statements with respect to *North East Venture Fund (NEVF)*

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1. It is the first and the only dedicated Venture Fund for the North Eastern Region (NER).
2. The Venture Fund Scheme was launched by the Ministry of Finance in cooperation with North Eastern Development Finance Corporation Ltd (NEDFi).

Which of the statement(s) given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

30. Consider the following statements with respect to *Jiadhal River*

1. It is a northern sub-tributary of the river Brahmaputra originates in the sub-Himalayan Mountains of Arunachal Pradesh.
2. The river Jiadhal carries heavy silt load and follows a braided pattern.

Which of the statement(s) given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

31. The FAO Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities. Which of the following is/are *not* the part of the basket?

1. Meat
2. Sugar
3. Cereals
4. Vegetable Oil
5. Dairy Products

Select the correct answer using the codes given below:

a) All except 4

b) All except 1 and 5

c) All except 2 and 4

d) None of the above

32. Consider the following statements with respect to *National Startup Advisory Council*

1. It was constituted by the Department for Promotion of Industry and Internal Trade (DPIIT) to advise the Centre on nurturing innovation and startups in the country.
2. The term of the Non-official members of the Council shall be for a period of two years.
3. The council is chaired by the Union Minister for Commerce and Industry.

Which of the statements given above are correct?

a) 1 and 2 only

b) 1 and 3 only

c) 2 and 3 only

d) 1, 2 and 3

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33. With respect to *Unmanned Aircraft* regulation in India, consider the following statements:
    1. Foreigners are currently not allowed to fly drones in India.
    2. All drones except those in the Nano category, which are less than 250 grams, must be registered and issued a Unique Identification Number (UIN) in India.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

34. *Online Fantasy Sports*, which are based on skill-based engagement platform, was accorded protection by various High Courts and Supreme Court under which of the following rights?
    a) Protection of life and personal liberty
    b) Right to freedom of speech and expression
    c) Equality of opportunity in matters of public employment
    d) Right to practise any profession, or to carry on any occupation, trade or business

35. *Darfur Province*, often seen in the news recently for clashes between members of the Arab Rizeigat tribe and the non-Arab Massalit tribe, is located in?
    a) Israel
    b) Sudan
    c) Yemen
    d) Saudi Arabia

36. Consider the following statements with respect to *National Road Safety Council (NRSC)*
    1. It is an advisory body established under section 215 of Motor Vehicles Act, 1988.
    2. The Council is chaired by the Union Minister of Road Transport and Highways (MORTH).

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

37. *Project Sea Bird*, often seen in the news recently, refers to?
    a) Oil drilling in Indian Ocean
    b) Naval Infrastructure Project in Karnataka
    c) Conservation of sea gulls in Gulf of Mannar
    d) Translocation of Great Indian Bustard to Wayanad Wildlife Sanctuary

38. Consider the following statements with respect to *Nubra valley*
    1. The Shyok River and The Nubra River confluences at the Nubra valley.
    2. Thikse Monastery a gompa affiliated with the Gelug sect of Tibetan Buddhism is located in Nubra Valley.

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Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

39. Which of the following statements are correct with respect to *Iron Ore Policy 2021*
    1. It is drafted and released by Ministry of Earth Sciences.
    2. It gives higher priority to movement of iron-ore traffic for export purposes.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

40. Consider the following statements with respect to *Shram Shakti Portal*
    1. It is a National Migration Support Portal to help migrant workers.
    2. It was launched by the Ministry of Tribal Affairs.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

41. Which of the following is the objective of *TESS Mission* of NASA?

a) To orbit earth and study aurora
b) To study the upper atmosphere of Mars
c) To discover transiting exo-planets
d) To map the boundary of our solar system

42. Which of the following statements are correct with respect to *Risk Based Internal Audit (RBIA) Framework*
    1. It is launched by RBI for Strengthening Governance arrangements of banks.
    2. Under the framework Head of Internal Audit (HIA) shall have the ability to exercise independent judgement.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

43. Consider the following statements with respect to *Zanskar River*
    1. It is a distributary of River Shyok which originates from greater Himalayan range.
    2. The River joins Indus River near Nimo (or) Nimmu in Ladakh.

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Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

44. Which of the following statements are *incorrect* with respect to *Indian Star Tortoise*

1. They are found in dry lowlands of India, Pakistan and Sri Lanka.
2. It is an endangered species under IUCN Red list.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

45. Consider the following statements

1. He took a stone from a river and installed it as a Sivalinga to show that consecration of an idol was not the monopoly of the higher castes.
2. He held all religions to be the same and condemned animal sacrifice.
3. He also wrote a poem AnukampaDashakam

Identify the personality who correctly matches with the above description:

a) B R Ambedkar
b) SriNarayana Guru
c) Gopal Ganesh Agarkar
d) Periyar E. V. Ramasamy

46. Which of the following statements are correct with respect to *Radio Access Network (RAN)*

1. It is a telecommunications system that connects individual devices to other parts of a network through radio connections.
2. Open RAN is a new technology which will be used to develop new software that enables single vendor proprietary architecture.

Select the correct answer using the codes given below:

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

47. Consider the following statements with respect to *Nitrogen-Use Efficiency*

1. It is the fraction of applied nitrogen that is absorbed and used by the plant.
2. Cereal crops consume more nitrogen fertilizers than Pulses.

Which of the statement(s) given above is/are correct?

a) 1 only
b) 2 only

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c) Both 1 and 2

d) Neither 1 nor 2

48. Consider the following statements with respect to *Nanobodies*

1. These are antibody fragments, they can be produced by bacteria or yeast, which is less expensive.
2. They are used in clinical therapeutics, immunodiagnostics, and more for environmental monitoring applications.

Which of the statement(s) given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

49. Which of the following statement(s) is/are correct with respect to *Grid-connected Rooftop Solar Scheme*

1. It aims to achieve a cumulative capacity of 40,000 MW from Rooftop Solar Projects by the year 2022.
2. Any rooftop solar firm or vendor is authorised to implement rooftop solar scheme.

Select the correct answer using the codes given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

50. Consider the following statements with respect to *Treaty on the Prohibition of Nuclear Weapons*

1. The treaty banned the ratifying countries to develop, test, produce, acquire, possess or stockpile nuclear weapons under any circumstances.
2. India is neither party to nor bound by any obligations of the treaty.
3. Japan, the world's only country to suffer nuclear attacks, does not support the treaty.

Which of the statement(s) given above is/are correct?

a) 1 only

b) 1 and 2 only

c) 1 and 3 only

d) 1, 2 and 3

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